

**THE
RAILWAY GAZETTE**

A Journal of Management, Engineering and Operation
INCORPORATING

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DIESEL RAILWAY TRACTION

The March issue of this RAILWAY GAZETTE publication, illustrating and describing developments in Diesel Railway Traction, will be ready on March 1, price 2s.

Transport Administration in Tropical Dependencies

By George V. O. Bulkeley, C.B.E., M.I.Mech.E.

With Chapters on Finance, Accounting, and Statistical Method

IN COLLABORATION WITH

Ernest J. Smith, F.C.I.S.

(formerly Chief Accountant, Nigerian Government Railway)

190 pages Medium 8vo. Full cloth

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THE RAILWAY GAZETTE

33, TOTHILL STREET, WESTMINSTER, S.W.1

Salaries of Members of National Boards

ELSEWHERE in this issue we publish a list, which was given by the Prime Minister to the House of Commons, showing details of salaries paid to members of central and area nationalised boards which have commercial characteristics. It will be seen from this that the total exceeds £468,250 a year, and a further £51,900 already has been allotted in expenses allowances. This second figure does not include expenses for members of the Colonial Development Corporation, the Railway, London Transport, Road Transport, Docks & Inland Waterways, and Hotels Executives, which are at present under consideration. The most expensive of the State controlled undertakings is the electricity authority; the members of the Central Board and of the 14 area boards will receive a total of £167,500 in salaries. Railway Executive salaries total £38,500, and the British Transport Commission accounts for £29,500. Additional, of course, are the salaries of officers and clerical staff. The London Transport Executive and the Road Transport Executive each receive £21,250, and the Docks & Inland Waterways Executive receives a total of £18,750. Salaries of the National Coal Board members aggregate £48,500.

London Transport's Last Dividend

The announcement of the final distribution on the "C" stock of the London Passenger Transport Board provides for a payment at the rate of £1.930066, or approximately £1 18s. 7d. per cent., which, with the interim dividend of 1½ per cent., makes a total of £3.180066 per cent. for the year. This is equal to £3 3s. 7d. per cent., as compared with £3 per cent. for 1946. The London Passenger Transport Board, therefore, has ended its separate existence without ever having paid the standard dividend (lately 5½ per cent.) on its junior stock. The preliminary statement issued by the Board shows that the balance of net revenue available for a distribution in respect of the year 1947 is £4,719,530 compared with £4,695,825 for the previous year. The available net revenue comprises £4,656,639 in respect of the fixed annual sum receivable under the Railway Control Agreement, £23,843 transferred from the "C" Stock Interest Fund, and a net sum of £39,048 in respect of adjustments consequent on Section 20 of the Transport Act, 1947. Interest on the prior charge stocks requires £3,902,291, leaving £817,239 for the service of the "C" stock.

A Pioneer of Popular Railway Journalism

Public interest in details of railway operation and engineering, which now is regarded as a valuable goodwill feature of the railways in many parts of the world, was certainly not encouraged in the latter part of last century. Possibly the competitive characteristics of the period may have been a contributory cause, but most railway companies regarded public interest in the details of their business as an unwarranted intrusion. Probably the first effort to supply the inquiring needs of a growing popular interest in railways was made by a paper called the *Railway Herald*, which conducted a "Question and Answer" column, to which an increasingly frequent contributor was Mr. George Augustus Nokes, under his pen name of G. A. Sekon—Nokes spelt backwards. G. A. S. were also the initials of a famous Victorian journalist, George Augustus Sala. Out of this grew *The Railway Magazine*, and the eventual triumph of popular interest as a recognised and legitimate feature of railway operation, and indeed a valuable asset. For many years, the interest was peculiarly British, but it has spread to other countries, such as Belgium, France, Germany, and the U.S.A., within the past two decades. Nokes was not merely a pioneer, but has continued as a popular railway writer to the present time, covering a period of well over half a century. His death on February 19, at the age of 81, is referred to in greater detail in our Personal columns.

Snow and Floods in the North-East

In his address to the London Section of the Permanent Way Institution, on February 18, the President, Mr. J. Taylor Thompson, M.C., Civil Engineer, Railway Executive, North Eastern Region, recalled the blizzards, and subsequent floods, in the north-eastern counties, early in 1947. On the Darlington-

Penrith section of the L.N.E.R., which crosses the Pennines at a height of 1,370 ft. above sea-level, conditions were exceptionally severe, and the line was closed for several weeks. At Barras, some distance to the west of Stainmore summit, the snow drifted to a depth of 30 ft. The station was buried completely, and a snow plough, which had stuck in a blocked cutting, had to be abandoned. The task of clearing the track was rendered the more difficult by the severe frosts, which consolidated the snow into a solid mass. Special expedients, such as the burning of oil in deep trenches, and the employment of jet aero engines, were far from successful, and the best results were obtained from snow ploughs, and manual labour. Some of the worst flooding occurred at Selby, where the river burst its banks, and submerged part of the main line from London to Edinburgh. This section was due for relaying, and the work was carried out as soon as the floods had subsided, and before the railway was re-opened.

San Paulo (Brazilian) Railway Co. Ltd.

On October 8, 1946, the main line of the San Paulo (Brazilian) Railway from Santos to Jundiáhy was handed over to the Government of Brazil. The company's report, which has just been published, covers the period from January 1 to November 8, 1946, as far as the main line is concerned, although the accounts of the Bragantina Railway are for the 12 months to December 31, 1946. Main-line receipts, at £4,309,409, show a decrease of £91,204. Working expenses of £4,223,633 represented 98.01 per cent. of the gross receipts, as compared with 88.64 per cent. in 1945. In his statement issued with the report, the Chairman, Mr. G. M. Booth, outlines progress with the company's claim against the Brazilian Government. With regard to the so-called recognised capital of £6,638,803, Mr. Booth says that the latest reports suggest that payment will not now be delayed much longer. The company has continued to ship to Brazil rolling stock and machine tools ordered before the disappropriation to the extent of £1,500,000, and delay in settlement of claims for reimbursement is becoming increasingly serious. Mr. Booth, in company with Colonel Bury and Mr. C. B. Good, proposes visiting Brazil towards the end of April in order to be able to present to stockholders proposals for dealing with such assets as remain to the company after all negotiations have been completed.

South African Railways at War

Claims and counter-claims to credit in the various campaigns of the war tend to capture public attention to the exclusion of the creditable performances of men whom no controversy brings into the limelight. That their hard and dangerous work, whether on or behind the front line, should be put on record is, therefore, the only means of ensuring that the historian of the future shall obtain a balanced view of the war. South African railwaymen will welcome, therefore, the appearance of "We Fought the Miles," a book reviewed elsewhere in this issue. The tasks undertaken and difficulties overcome are summarised in an introduction by Field-Marshal Smuts, who writes: "War not only multiplied the travelling public many times, but also added troops of other Allied forces to already overburdened trains. Vast quantities of equipment and stores had to be transported in the wake of troop movements; coal traffic rose by seven million tons a year; farmers, merchants and manufacturers—aiming at increased production—also demanded more trucks, while great convoys had to be supplied from the hinterland. The railways coped with this situation with their 1939 equipment. . . . More than 14,000 railwaymen volunteered for active service. This book records their achievements in the construction, restoration and operation of military railway services and harbour facilities in Abyssinia, Palestine, the Western Desert and Italy."

European Officers on Indian Railways

It may be remembered that in the editorial columns of our issues of July 25 and August 15 last, we called attention to the plight of the 338 European officers, previously recruited by company-worked Indian railways, and subsequently under contract with the Governor General in Council and not with the Secretary of State. No concrete improvement in the outlook

of these officers is as yet apparent. In fact, their prospects would seem to have sustained a further serious set-back in the Government of India's more recent statements of policy. Introducing the Dominion's first Railway Budget in November, the Transport Member is reported in the Indian press to have announced that it was necessary in the public interest to build up as quickly as possible a reserve of Indian officers on the railways with training and experience required for holding key positions. So far this seems reasonable enough, but he is stated to have continued: "When vacancies arose hereafter in key positions it was proposed that preference should be given definitely to Indian officers of proved ability, irrespective of considerations of seniority." All that the European officers have to look forward to, therefore, is supersession by Indians. Is His Majesty's Government still adamant in refusing to give any guarantee that they will receive their just dues in the form of gratuities and provident funds in lieu of pensions?

Report on European and U.S. Transport

Two engineers of the Rolling Stock Branch of the Victorian Railways, Mr. W. O. Galletly and Mr. W. H. Chapman, have presented their report on a tour of inspection carried out in Europe and North America last year. Their main object was to study the use of pulverised brown coal as a locomotive fuel in Germany, and as a result of their recommendations two equipments have been ordered from Germany for trial on the Victorian Railways, where it is hoped that the use of this fuel may lessen dependence on black coal supplies from New South Wales. The report deals, also, with a very wide range of subjects connected with motive power and rolling stock practice. In Great Britain the engineers visited Crewe Works, where they were impressed by the very short time that locomotives have to be held for overhaul under the maintenance system developed by the former L.M.S.R. At Swindon they inspected a Hughes supersonic flaw detector, installed there by the G.W.R. for detecting hidden flaws in axles without stripping the wheels. Two equipments of this type have been ordered for installation in the Rolling Stock Branch workshops of the Victorian Railways. The report, running to 150,000 words, provides the department with a valuable source of data on current practice.

Reconditioned Rolling Stock, N.W.R., India

Some years before the war the North Western Railway, India, inaugurated a system of reconditioning for rolling stock whereby after 15-20 years of service its carriages were thoroughly overhauled, enabling their full life of 30 years to be completed without further heavy structural repairs. Though this policy was suspended during the war, recently it has been revived, and at the same time extended to include modernisation of interiors. The first carriage to be completed in this way, which is described by Mr. N. C. Watney in this issue, represents the culmination of the efforts of the Carriage Research Staff, N.W.R., over a period of 18 months, for which work Mr. Watney was given a free hand by Mr. H. M. R. Morse, C.M.E. In the new coach, extensive use has been made of aluminium-alloy castings for berth frames, toilet basins, window frames, etc., and of Waverite laminated plastics for wall and ceiling panels. This use of plastics for the first time on Indian rolling stock, adopted in this instance to avoid the use of paint and because teak was in short supply, is of special interest in view of the severe climatic conditions experienced on the N.W.R. The bench-type seat has given way to the individual seat with head rests and folding arm rests, the top berth in the second class compartment is now permanently fixed in the sleeping position following its universal use as a heavy luggage rack, and as many fittings as possible have been designed to prevent theft.

Locomotive Service Stations

Recent improvements at the Williamson running sheds of the Norfolk & Western Railway, U.S.A., will yield savings in locomotive availability totalling 456 locomotive-days a year, according to an article published in our American contemporary, the *Railway Age*. A description of these new servicing arrangements appears elsewhere in this issue; in general the

principle is to cause all locomotives to pass through the shed in one direction, like the assembly line in a mass-production factory. The new facilities make it possible for a locomotive to be "serviced"—that is, inspected, lubricated, washed, filled with coal and water, and to have its fire cleared, in less than an hour. The two chief items in the new equipment are an engine-service building in which lubrication, inspection, and minor adjustments and repairs can be effected; and an engine-washing platform combined with ash-handling plant and water columns. The lubrication system provides for the piping of lubricants to the parts to be replenished and shows considerable enterprise; the ash-handling plant is also of great interest, as it is entirely hydraulic in operation. Apart from time-saving, an important advantage of the new plant is that it makes the working conditions for the employees much more attractive than is general in running sheds.

French Electro-Mechanical Signal Box

There has been lately in France a strong tendency to make use of the electro-mechanical, or "mixed," type of signal box, in places where the expense would not justify a complete power installation, and an all-mechanical installation, on the other hand, would be inadequate. Under one system electrically-operated functions are activated by ordinary levers, or smaller levers occupying the same amount of space longitudinally. This arrangement effects no reduction in the length of the signal box, and the alternative arrangement, under which miniature electrical levers are mounted above the mechanical ones and at half the centre measurement of the latter, is now greatly preferred. (A few installations of this kind were made in this country over 40 years ago). A neat layout of this kind has been installed at La Chapelle, Paris, and described in *La Revue Générale des Chemins de fer* by MM. Martin and Cauchois. The mechanical levers are of the half-revolution pattern, and it is interesting to note that the old Saxby grid type locking, still so popular in France, has in this case given place completely to Stevens tappet locking, owing to space restrictions.

Self-Praise

IN our last week's issue we dealt at some length with the press conference held by Sir Eustace Missenden, the Chairman of the Railway Executive, to announce the decision of that body to cater for party travel and sporting events by the provision of special train facilities. At the press conference, the custom, which has grown up in recent years, of providing a press summary of the points to be made by the speaker, was observed. Normally, these summaries, or "press releases" as they are known, form the basis of the subsequent article which appears in the daily and weekly press. The preparation and issue of these releases, which normally give the salient points and any relative statistics, is of considerable assistance to the press generally. So long as these press releases remain factual no exception can be taken to them, but when they tend to incorporate laudatory comment they come near to usurping the editorial function.

The opening, and two subsequent paragraphs of the Railway Executive press releases last week, came within this category. It commenced: "That the newly-formed Railway Executive intends to pursue an enterprising, virile and courageous policy is evident in the welcome news given in the House yesterday when, in a Parliamentary Written Answer, the Minister of Transport indicated that the British Railways are to be free to run improved passenger train services, including some special trains, so far as their resources permit."

Later it stated:—"These early and progressive measures have been made possible by the success attending the wagon drive campaign and by the general fluidity of freight movement on the British Railways during this more open winter."

"The grave handicaps with which British Railways are still contending through wartime strain and scarcities of essential commodities and of manpower for the renewal of their assets might have justified a postponement of any immediate action. Instead, the Railway Executive is going out boldly with a policy to serve the public to the absolute limit of their resources; resources which they plan shall steadily grow until pre-war standards are surpassed."

These paragraphs, we suggest, came very close to attempting to write editorials for the newspapers receiving the press releases. The Railway Executive, of course, is entitled to believe all that it says of itself, but it is at least open to question whether what, in effect, comes down to the running of a relative few special trains and the reduction of fares for party outings, merits quite such lavish praise. *The Economist*, at least, takes a different view. In its February 21 issue it suggests that the addition of an extra 8 million tons to the national coal budget has gone to the Government's head. If it was worth saving 10,000 tons of coal a week last year, it is at least as important to do so this year. "While Sir Stafford Cripps has been trying to bring home to the public the real meaning of national bankruptcy," says *The Economist*, "it is scandalous that Mr. Barnes should be squandering on amusements one of the country's all too few assets."

The Economist goes on to ask whether Mr. Barnes is indulging in some special offerings on the altar of transport nationalisation. Such action would be both wanton and dishonest. The nationalisation of the railways must be tested honestly on its merits; an extra "Riviera Express" this August will do nothing to prove nationalisation is a success; that can be done only if the Transport Commission gets down to the real job of co-ordination, which admittedly has none of the facile attractions of extra sport facilities.

Compensation for Railway Directors

AT the annual general meetings of the four main-line railway companies, which are to be held on March 4 and 5 next, stockholders of each company, except the G.W.R., will propose the payment, as compensation for loss of office, of a sum equivalent to three years' fees to the directors. The G.W.R. board has made it known that it has decided against any such proposal which might be forthcoming from proprietors, and, as will be seen elsewhere in this issue, its recommendation in respect of the final dividend of the company will scrape the barrel completely clean. It has been suggested that the action of the G.W.R. directors is intended as a final gesture against the harsh treatment the stockholders have received in the transfer of their company to the new British Transport Commission, and is intended to infer that as the ordinary stockholders will suffer a heavy loss of income under the nationalisation terms they should receive the whole of the remaining funds of the G.W.R.

As *The Times* in its "City Notes" of February 20 pointed out, it is not the first time that the G.W.R. directors have taken an independent line on a question of policy, and the decision, and the reasons that have prompted it, do them credit. On the other hand, it may be argued with equal strength that by all normal standards of equity the directors of a railway company are just as entitled to compensation for loss of office as are the ordinary officers and servants "whose position is worsened in consequence of the transfer," for whom specific provision is made in the Transport Act. Because the Government has not seen fit to include railway directors among the classes eligible for compensation is no good reason why the stockholders themselves should refrain from giving them some tangible expression of their appreciation of the services which the boards have rendered.

We understand that in one quarter the suggestion has been made that the "burden" of paying compensation should be spread over all classes of stockholders, instead of being met by the most junior security owners. In practice, this would be very difficult to achieve, as it would involve making a fractional change in the contractual interest of the prior charges.

The amounts which it is proposed to be paid are: £75,000 to the L.M.S.R. board of 17 directors, £63,000 to the L.N.E.R. (21 directors), and £60,000 for the Southern Railway board of 16 directors. The sacrifice which the stockholders are making to provide these sums is very small; for example, in the case of the Southern Railway the difference between paying and withholding the directors' compensation is equivalent to only one-sixth of 1 per cent. on the dividend. In fact, one is reminded rather of the answer which Lord Stamp gave at an annual meeting to a stockholder who queried his remuneration; he said that it was equivalent roughly to one sandwich from each of the L.M.S.R. ordinary stockholders, and he was sure they would not grudge him that.

Southern Railway Company

IN our last week's issue we gave brief details of the report of the directors of the Southern Railway Company in respect of the year 1947; this will be submitted to the general meeting of proprietors of the company registered immediately before January 1, on which date the undertaking passed to the British Transport Commission. It is the final statement of the directors and it is not accompanied by the accounts and statistical returns which, we understand, will be made available later. For this reason all the usual statistical comparisons are not possible.

The directors refer to the Transport Bill, which was introduced by the Government to set up in Great Britain a publicly-owned system of inland transport, and which received the Royal Assent on August 6, 1947. In accordance with the Act, the undertaking of the company vested on January 1, 1948, in the British Transport Commission, and compensation was payable to the holders of the company's stocks by reference to their values. Except in the case of the perpetual annuities, these values were arrived at on the basis of stock exchange quotations. The value of the perpetual annuities, which were not quoted in the *Stock Exchange Official Daily List*, will be determined by the Transport Arbitration in accordance with the provisions of the Act. Compensation for other securities was effected by the issue at par on January 1 of stock bearing interest at 3 per cent., and redeemable at par in 1988, or from 1978 onwards at the option of the British Transport Commission.

By Section 20 of the Act, an auditor appointed under the Act was required to ascertain and to certify in respect of the years 1946 and 1947 together (the final period), the total of the amounts payable to the company under the Railway Control Agreement, and the net revenue from undertakings (mainly road transport undertakings) excluded from the agreement. From the total there are to be deducted all interest and dividend payments for 1946, and similar payments for 1947 other than the final payments on the 5 per cent. preference, 5 per cent. redeemable preference (1964), and preferred ordinary stocks, and the payment for the year 1947 on the deferred ordinary stock. The balance, together with £227,000, payable to the company under Section 20 (8) (d) of the Act represents the amount available for distribution. The auditor has given his certificate and the resultant figures are as follow:—

Sum payable for the final period to the company under the control agreement	£
Net revenue for the final period from undertakings excluded from the control agreement	13,795,388
Sum payable to the company under Section 20 (8) (d) of the Act	963,648
	227,000
	14,986,036
Deduct : Interest and dividends already paid :—	
For the final period :—	£
Interest on perpetual annuities and debenture stocks	4,486,334
Dividend on guaranteed preference stocks	1,232,816
For the year 1946, and interim payment for 1947 :—	
Dividend on 5 per cent preference and 5 per cent. redeemable preference (1964) stocks	3,202,305
Dividend on preferred ordinary stock	2,068,995
For the year 1946 :—	
Dividend on deferred ordinary stock	865,982
	11,856,432
	£3,129,604

Section 21 of the Act provides that such sum, if any, as may be authorised by the proprietors in general meeting may be paid as compensation for loss of office out of the balance available. Notice has been given by a proprietor of his intention to move a resolution at the general meeting that the sum of £60,000, equivalent to three years' fees, should be paid as compensation to the directors for loss of office, and this sum should be divided as they think fit. The directors do not propose to make any recommendation to the proprietors regarding this resolution; they will refrain from voting on it themselves, and from asking for proxies to use in its favour.

Apart from the dividend on the deferred stock, the appropriation of the available balance of £3,129,604 will permit a final dividend at the full rates on the 5 per cent. preference stock, 5 per cent. redeemable preference stock (1964), and on the preferred stock, and leave a balance of £1,372,504. If the resolution for payment of the directors is approved, the balance then available for dividend on the deferred ordinary stock will be £1,312,504, which will enable a dividend of 4½ per

cent. to be paid. This will compare with 2½ per cent. in respect of 1946 and will leave £411 repayable in accordance with the Act to the British Transport Commission. If the resolution is not approved, the balance available will enable a dividend of slightly over 4½ per cent. (£4 7s. 2d. per cent.) to be paid, leaving £160 to be dealt with similarly.

Great Western Railway Company

THE report of the directors of the Great Western Railway Company, which will be submitted to the last annual general meeting, to be held at the Great Western Royal Hotel, Paddington Station, at noon on March 5, points out that the amount available for the years 1946 and 1947 is limited to the items specified in Section 20 of the Transport Act, 1947. The British Transport Commission has received the certificate of the auditor and is making the necessary funds available to the company.

Net revenue for the year, after giving effect to the estimated operation of the financial arrangements with the Government in respect of the control of the undertakings, was £6,559,790, plus £142,273, the company's proportion of net revenue from jointly-owned and jointly-leased lines. Miscellaneous receipts (net) were £825,294, and the proportion of general interest £12,414, giving a total net revenue for the year of £7,539,771, which compares with £7,467,390 for the year 1946. After meeting interest and dividends on the pre-ordinary stocks, the balance, including £845,514 brought forward, available for dividends on the ordinary stock is £3,126,211.

The interim dividend of 2 per cent. paid on the ordinary stock for the half-year ended June 30, 1947, absorbed £858,595. This leaves a balance of £2,267,616, which will admit for the payment of a dividend of £5.282158 per cent. for the half-year ended December 31, 1947, making £7.22158 per cent. for the year. This absorbs the whole of the balance available. A year ago the total payment for 1946 was brought up to 5 per cent. As the proposed payment will absorb the whole of the balance available, it is clear that the Great Western Railway directors have decided against any proposals for compensation for loss of office that the stockholders might be prepared to vote them. The report makes no direct reference to this, but states that, apart from the formalities connected with the winding up of the company, the directors have fulfilled the only functions left to them by the Transport Act, 1947. The administration of the undertaking is now in other hands, but the directors are confident that the staff will continue to maintain the standards of efficiency and courtesy which have always been the aim of the company throughout its long period of existence. Results for the last three years are summarised below:—

	1945	1946	1947
Joint lines—Company's proportion net revenue	142,273	142,273	142,790
Miscellaneous receipts (net)	*272,982	*499,321	*825,294
Net revenue	6,943,585	7,467,390	7,539,771
Interest on loans and debenture stocks	1,649,855	1,649,855	1,649,855
Dividends on rent charge, guaranteed, and preference stocks	3,339,914	3,339,914	3,339,914
Balance after payment of preference dividends	1,953,816	2,722,695	2,280,697
Dividend on ordinary stock	2,146,496	2,146,486	3,126,211
Rate per cent.	5	5	7.282158
Appropriation from contingency fund	150,000	—	—
Surplus or deficit (+ or -)	-42,670	+576,209	—
Balance brought forward from previous year	311,975	269,305	845,514
Balance carried forward to subsequent year	269,305	845,514	—

* Other than those included in financial arrangements with the Government

Dividends on the ordinary stock for the past ten years have been as follow:—

1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
0 0 1/2	0 0 3/4	0 0 4	0 0 4	0 0 4 1/2	0 0 4 1/2	0 0 4 1/2	0 0 5	0 0 5	7.282158

The balance sheet shows miscellaneous accounts of £30,740,138 compared with £15,916,443 for 1946. This includes provision for arrears of maintenance (other than amounts allocated to renewal funds), and other provisions, in all £28,893, of which £16,000,000 was set aside in 1947 for all the main-line companies. It is adequately clear, therefore, that whatever disabilities the railways are suffering in the way of their physical assets, these are the result rather of inability to secure labour and materials for maintenance and renewals, rather than to any shortage of cash resources under private ownership.

London & North Eastern Railway Company

THE annual report of the directors of the London & North Eastern Railway Company, which will be presented at the general meeting on March 5, shows, that after meeting fixed charges and dividends on the preference stocks, and subject to the payment of £63,000 to the directors for compensation for loss of office, it will be possible to pay 0.81 per cent. on the 5 per cent. preferred ordinary stock. This will be the first time since 1931 that this stock has received a dividend.

The profits of the company available for distribution for the years 1946 and 1947 are limited to the items specified in Section 20 of the Transport Act, 1947, which are as follows:—

	1946 £	1947 £	Total £
Section 20 (2) (a)— Annual sum payable to the company under Article 16 of Railway Con- trol Agreement	10,136,355	10,136,355	20,272,710
Less: Deduction for interest saved by re- demption of £7,740,570 5 per cent. redeemable debenture stock ...	—	275,161	275,161
	10,136,355	9,861,194	19,997,549
Section 20 (2) (b)— Net revenue from excluded under- takings	871,793	1,479,790	2,351,583
Total profits for years 1946 and 1947	11,008,148	11,340,984	22,349,132
Deduct: Interest and dividends—year 1946	—	—	10,978,767
	—	—	11,370,365
Deduct: Interest and interim dividends paid for 1947 before December 31, 1947	—	—	4,956,560
	—	—	6,413,805
Deduct: Permitted interest and fixed rate payments the liability for which passes to the British Transport Commission	—	—	3,108,461
	—	—	3,305,344
Balance due to the L.N.E.R. to which is added the amount payable to the company under Section 20 (8)	—	—	150,000
Total due to the L.N.E.R.	—	—	£3,455,344

All fixed charges and the dividends on the guaranteed stocks for the year 1947, have already been paid with the exception of £83 for interest on West Hartlepool primary charges payable on April 15, 1948. After providing for this interest and subject to the passing of the resolution of the stockholders in regard to the payment of £63,000 to the directors for compensation for loss of office, the balance of £3,392,261 will admit of the payment of the full final dividends on the 4 per cent. first preference stock, the 5 per cent. redeemable preference stock (1955), and on the 4 per cent. second preference stock, which will absorb £3,049,078, the balance of £343,183 admitting of the payment of 0.81 per cent. on the 5 per cent. preferred ordinary stock, leaving a balance of £59 repayable to the Commission. Dividend payments for 10 years were:—

	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
Pref. ord. 5% ...	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	0.81
2nd pref. 4% ...	Nil	2	2½	2½	2½	2½	3½	3½	4	4
1st pref. 4% ...	Nil	4	4	4	4	4	4	4	4	4
Red. pref. 5% ...	Nil	5	5	5	5	5	5	5	5	5

The miscellaneous net receipts of £854,477 shown for 1946 include £721,311 (£536,622) dividends from associated bus companies. They also include £7,969 (£7,969) from Currie & Co. (Newcastle) Ltd. and £106,110 (£35,819) from Hay's Wharf Cartage Co. Ltd. Results are summarised below:—

	1945 £	1946 £	1947 £
Joint lines—Company's proportion			
net revenue	350,558	350,558	350,558
Miscellaneous receipts (net)	*590,938	*854,477	*1,473,496
Net revenue	11,027,813	11,078,471	11,387,350
Balance brought forward from 1945 payable to B.T.C.	—	—	59,208
Profit on realisation of investments	30,258	33,311	—
Reserves no longer required	281,562	—	—
Interest on loans and debenture stocks, etc.	4,205,187	4,202,937	3,891,669
Dividends on guaranteed and prefer- ence stocks	6,875,155	6,792,477	7,205,866
Balance after payment of preference dividends	—	—	230,607
Directors' compensation	—	116,368	63,000
Dividend on 5 per cent. preferred ordinary	—	—	343,124
Balance brought forward from previous year	81,479	59,208	175,576
Balance carried forward to subsequent year	59,208	175,576	—
Balance repayable to B.T.C.	—	—	59

* Other than those included in financial arrangements with Government

On behalf of the proprietors the directors express to the members of the Audit Committee their appreciation of the services rendered by them at all times, and they also record their appreciation of the services rendered to the company by the Stockholders' Auditors, Sir W. Harry Peat, G.B.E., F.C.A., and Mr. Thomas Buston Robson, M.B.E., F.C.A., and their predecessors since the incorporation of the company.

London Midland & Scottish Railway Company

THE last annual report of the directors of the London Midland & Scottish Railway Company, which is to be submitted to proprietors at the general meeting at Euston Station on March 5, shows that the profits of the company for the year 1946-47, limited to the items specified in Section 20 of the Transport Act, 1947, have been certified by the auditor appointed under that section. A summary of the financial results is as follows:—

	1947 £	1946 £	Total £
Fixed annual sums (Section 20 (2) (a) and proviso)	14,755,998	14,751,957	29,507,955
Net revenue from excluded undertakings (Section 20 (2) (b))	1,702,299	1,171,723	2,874,022
Additional payment (Section 20 (8))	799,000	—	799,000
	17,257,297	15,923,680	33,180,977

Of the total net revenue for the years 1946 and 1947 of £33,180,977, interest and dividends for 1946 absorbed £15,531,620, leaving a balance of £17,649,357 available for distribution for 1947. Interest on the debenture stocks for 1947 amounts to £4,439,170 and the balance of £13,210,187 will permit the payment of dividends at the full rates on the 4 per cent. guaranteed; 4 per cent. preference; 5 per cent. redeemable preference (1955); and 4 per cent. preference (1923) stocks, on which stocks interim dividends at the full rates have already been paid. This leaves a balance for the year of £4,735,804, of which the interim dividend of 1½ per cent. on the ordinary stock absorbed £1,428,036, leaving £3,307,768 available for final distribution.

A stockholder has given notice of motion that he proposes to move a resolution at the meeting that a sum equal to three years' remuneration (£75,000) be paid to the directors as compensation for loss of office. If this resolution is carried the balance remaining will allow for a final distribution of £3 7s. 10½d. per cent. making £4 17s. 10½d. per cent. for the year on the ordinary stock.

Dividends on the ordinary stock for the past 10 years have been:—

	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
	Nil	1½	1½	2	2½	2½	2½	4	2½	£4 17s. 10½d.

Results for the past three years are given in the following comparative table:—

	1945 £	1946 £	1947 £
Total expenditure on capital account	462,932,107	463,086,780	464,513,669
Joint lines—Company's proportion of net revenue	112,725	112,725	112,725
Miscellaneous receipts (net)	*895,839	*1,150,458	*1,730,296
Net revenue	16,218,741	15,923,680	17,046,297
Profit on realisation of investments	—	—	211,000
Balance from 1945 payable to B.T.C. (Dr.)	—	—	69,698
Interest on debenture stocks	4,439,170	4,439,170	4,439,170
Dividends on guaranteed and preference stocks	8,474,383	8,474,383	8,474,383
Balance after payment of preference dividends	3,305,188	3,010,127	4,274,042
Directors' compensation	—	—	75,000
Dividend on ordinary stock	3,808,098	2,618,667	4,199,042
Rate per cent.	4	2½	£4 17s. 10½d.
Appropriation from contingencies fund	500,000	—	—
Surplus or deficit (+ or -)	-2,910	+392,060	—
Balance brought forward from previous year	72,608	69,698	461,758
Balance carried forward to subsequent year	69,678	461,758	—

* Other than those included in financial arrangement with Government

The miscellaneous receipts (net) include interest and dividends from investments in other undertakings, general interest, and profit on the working of the Northern Counties Railway (Ireland). The profit on this railway was £31,161, compared with £68,572 in 1946. The return from passenger road undertakings was £1,316,773 compared with £921,951, and from associated goods road undertaking £303,269 against £124,412. During the previous year a special dividend of £196,000 was received from the Birmingham & Midland Omnibus Co. Ltd. on the winding up of its subsidiary companies.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Central Line Train Services

25, Bucks Avenue, Watford,
Herts. February 14

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The remarks of London Transport, which belatedly endeavour to explain away the failures and delays on the Central Line, should be dismissed as pure "poppycock."

Similar stock of the same year of construction is in service on the Bakerloo and Piccadilly Lines, and as far as I am aware these trains are not continually breaking down. I therefore fail to see London Transport's plea that "new rolling stock is required."

On the other hand, some 300 cars were stored in the open during the war years and no doubt the deterioration due to weather conditions is mainly responsible for causing the present breakdowns. I should have thought, however, that the better brains within London Transport could have devised a more satisfactory way of introducing these cars into traffic.

If matters are hampered by the tunnels and lack of repair facilities on certain parts of the line, surely it would have been more expedient either to introduce these trains on less densely populated lines, such as the Northern City, or on a surface line—for example, the East London or the Hammersmith & City.

The Inner Circle would have served the purpose equally well, whilst the displaced stock could have been transferred to another section of the line.

Apart from the war, it seems to be adding insult to injury to introduce stock that is up to 25 years old on a new line, particularly in view of the fact that most of the old L.N.E.R. steam stock was of similar ancient vintage.

Yours faithfully,

A. R. GRIERSON

Railway Trolleys

D. Wickham & Co. Ltd.,
Ware, Hertfordshire. February 17

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Mr. A. L. Jones, in his letter published in your issue of February 13, defending the adaptation of standard road motor vehicles to railcars, hints at some very undesirable features.

The idea of altering toe-in and rake on the leading axle wheels to avoid "a frightening wheel wobble" is not attractive, especially if it is borne in mind that such presumably delicate adjustments may, at a later date, be in the hands of an out-station mechanic not particularly skilled in this particular sphere.

Again, on the question of braking, it is to be remembered that motorcar brakes are designed on the basis that the coefficient of friction between the wheel tyre and the road is unity, and over, whereas with a steel wheel running on a steel



Preparing to turn a car with manual jacks

rail the average maximum is 0.25; so once again a delicate adjustment is called for.

A further argument that there is nothing to choose between good track and perfect highway ignores the fact that these days there are very few good tracks, especially on systems which most demand the use of railcars and trolleys; on the best, the hammer blow on the wheels and axles over every joint is very unkind to axles and bearings designed to be protected from shock by an air cushion. Even with axles and bearings

designed for rail work, some sore of cushion between the wheel tyre and axlebox bearings would be an advantage, and experiments now being conducted show signs of being very successful in eliminating rail joint shock and noise. In the design being tested, the principle of using a comparatively large volume of rubber in shear is being used. If this new type of wheel proves successful in practice, one of the objections to converting road vehicles may be overcome partly.

Mr. Jones, however, is concerned presumably with standard-gauge railways, where conversion is comparatively an easy matter. It must be remembered, however, that the manufacturer has to cater for all gauges, and these vary from 5 ft. 6 in. to 1 ft. 3 in., the total number being 32; so while at all times being very willing to adapt available standard units, it is quite obviously impossible, even if desirable (the matter being argued) to adapt economically complete standard cars to such a wide range.

The mention of comfortless reversible seats has in the past been a justifiable criticism, but progress is being made and really comfortable reversible seats are now available. The reference to foolproof engine-actuated jacking is noted, but so far the writer has not had the good fortune to come across this; the enclosed photograph illustrates a not unusual performance.

The writer has travelled on many occasions fairly long distances on converted cars, and on one occasion of a run of approximately 100 miles, the car, although capable as a road vehicle of 60-70 m.p.h., was kept at a steady 40 km.p.h. An inquiry as to why the speed was not higher brought forth the rather cryptic reply that "we would get home quicker at this speed." On another occasion, on a different railway, although the car was fitted with a self-contained jack for turning, the driver preferred to reverse on the car's very low reverse gear for several miles to the nearest triangle, rather than attempt to jack the car up and turn it.

As regards the numbers built, this runs into hundreds a year, which, compared with road motorcar output, is "very limited numbers." Even so, apart from the gauge, if all railways could be persuaded to take standard type railcars and not cars built to their particular specification, some progress could be made in price reduction. Here again progress is being made, and more and more railway officials are beginning to fall in with the idea that their particular railway is not unique and demands special design and construction.

Yours faithfully,

A. H. SOMMER
Director (Works)

Stephenson Valve Motion

390, Wakefield Road,
Huddersfield. February 20

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The fitting of Stephenson valve gear to a new L.M.R. Class "5" 4-6-0 [see our February 20 issue—Ed., R.G.] has given rise to some comments that are not in close agreement with experience.

Not only is it mentioned that Stephenson gear is preferable to Walschaerts gear for starting and heavy pulling (this is true although the difference is small), but it is now claimed that the former is advantageous for high speed, despite the fact that all the high-speed, high-performance records are held by locomotives with Walschaerts gear or cam-operated valves.

As the L.M.R. Class "5" 4-6-0 No. 4767 is closely equivalent to the Western "Hall," the effect of the Stephenson gear on her performance is known reasonably accurately beforehand.

The doubtful point about No. 4767 is the strength of the double return-cranks, and trial in actual service is the only way of settling it.

Yours faithfully,

W. A. TUPLIN

Preservation of Railway Relics

Thurstanton, 22, Heatherfield Road,
Huddersfield. February 23

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—May I call attention to an unfortunate misprint in my letter printed in your issue for February 20. It occurs at the end of my first suggestion re preserving historical locomotives, where the words read "the (presumably) derelict testing engines." The word "testing" should read "Festiniog," which are, of course, narrow-gauge engines. Most probably the error is due to my bad handwriting, but the sentence, as it stands, is meaningless, so far as I am aware.

Yours faithfully,

WILLIAM B. STOCKS

The Scrap Heap

A "WHERRY" ODD PARAGRAPH

An electric train on the Dalston Broad (London Midland Region) was derailed on the down-line outside Dalston Junction Station today.—From the "Evening Standard," February 16.

A correspondent sending us the above newspaper cutting says he has heard of Oulton Broad, Hickling Broad, and other Norfolk Broad, and also of boats on a Broad, but he has never heard of Dalston Broad. Possibly, however, he thinks it may have been one of the channels traversed by G. K. Chesterton, "the night we went to Glastonbury by way of Goodwin Sands."

100 YEARS AGO

From THE RAILWAY TIMES, Feb. 26, 1848

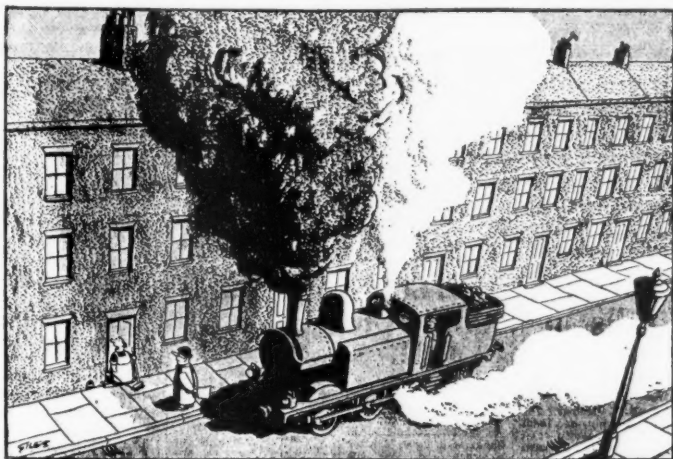
RAILWAY EXPRESSING.

[From the Glasgow Herald.]

THE London journals of Saturday morning, containing the financial statement made by Lord J. Russell, were delivered in the Royal Exchange here precisely at four o'clock the same afternoon. This is the most notable feat of railway expressing which has yet taken place in connection with Scotland; and the public are indebted for this early information—which almost rivals the rapidity of the electric telegraph—to the enterprise of Messrs. W. H. Smith and Sons, news-agents, 192, Strand, London. The route selected was the Midland and Eastern one, via Rugby, York, Newcastle, Berwick, to Edinburgh, and from thence by the Edinburgh and Glasgow line to this city. The total distance of 472 miles was performed in 10 hours 22 minutes, including stoppages; and it is worthy of remark, that the highest rate of speed was attained between Rugby and York, and between Edinburgh and Glasgow, when the velocity in each instance was at the rate of 52 miles an hour. The express beat her Majesty's mail by about fourteen hours. The following specific details of the progress of Messrs. Smith's express may be agreeable to those who take an interest in these railway gallops:—

	H.	M.
Left London	5	36 a.m.
Arrived in Glasgow	3	57 p.m.
Time taken (including stoppages, amounting to 45 minutes)	10	22
Total distance	472	miles.
	Distance.	Rate
London to Rugby	82 miles.	42 miles.
Rugby to York	137 "	52 "
York to Newcastle	51 "	47 "
Newcastle to Berwick	65 "	42 "
Berwick to Edinburgh	58 "	47 "
Edinburgh to Glasgow	46 "	52 "
	472 miles.	

Giles Goes on Tour with British Railways



"Fred! Bloke here wants to know what colour you'd like your engine?"

[From the "Daily Express"]

THE IMPORTANCE OF APOSTROPHES

South of the Border an element of doubt often arises in the spelling of certain Scottish names, and our correspondent, Mr. Norman D. Macdonald, recently adjudicated for our benefit on the treatment of one of them that is liable to occur frequently in railway literature. Some of the refinements of punctuation involved seemed somewhat outside the range of ordinary typography, and we have reproduced below the relevant portion of his letter as it was written.

Macintosh (small k. correct)
 Macintosh
 Macintosh
 Mcintosh
 Mcintosh CR. locos.
 Mcintosh
 Mcintosh all variants

ON THE RAILS

An assumed possession of a forty-five-millionth of British railways has aroused the imaginations of some citizens. Even the severely technical atmosphere of the Institute of Transport has been invaded by two men of ideas who suggested separate compartments for talkers and readers, libraries on the trains, make-up cubicles for women and other fancy amenities.

But first things first. The ordinary traveller wants a railway service that will make journeys bearable before he looks round for novelties. He would like to be sure of the seat to which his ticket ought to entitle him. He is tired of standing in a corridor from London to almost any provincial city. . . .

He wants to get to his office or factory when work begins in spite of snow and fog. It is insufferable that his suburban section should be thrown into confusion by frozen points when he knows that anti-freeze equipment would allow it to work normally.

He is dismayed to be held up by fog

when some new signalling devices can overcome it. . . .

He expects British railways to save his pocket. The ideal to be aimed at is lower fares; if there is any money to spare cheaper travel would give the widest satisfaction.

Except, perhaps, running to time. This is also a good idea. Its achievement would compensate for postponing railway cinemas and boudoirs for a year or two.—From "The Star."

STOP ME AND BUY ONE

On March 1, when President Peron of Argentina formally takes over the railway systems purchased from Great Britain, every train in the country will stop for 5 min. at 7 p.m. The actual ceremony will be held at the Retiro Station, Buenos Aires.

BRING OUT YOUR BOTTLES

An appeal to railway staff to salvage empty bottles, ranging from 6-oz. to ½-oz. capacity, has been sent out by the Western Region Stores at Swindon, which requires thousands for castor oil, sal volatile, iodine and other antiseptics; 7,000 are used annually to re-equip first aid cabinets in all parts of the system.

LOST LUGGAGE

(On first looking into a clearance sale catalogue)

'Twas but a whim, a passing chance,
 That made me give a casual glance
 Within thy pages, blessed book—
 Heaven must have prompted that brief
 look!

Excitement bubbled in my veins,
 As I reviewed "what's left in trains,"
 And wove around thy various "lots"
 All sorts of complicated plots.

Corsets, egad! (Lot 49),
 How came they wandering on the line?
 Some atavistic urge, no doubt,
 To cast a clout ere May was out.

A thousand "strays" compose thy range,
 And yet I find it passing strange
 That gloves and brollies porters find
 Are seldom those I've left behind.

Around the auction rooms recline
 Worshippers at Amnesia's shrine,
 Who profit by things once enjoyed
 By others gainfully employed.

They greet the unknown with surmise,
 On wings of speculation rise
 To millionairehood from a sack
 Of oddments left upon the rack.

More could I say, but space is short;
 If readers want a full report,
 They must like me be—all agog
 To grab the next sales catalogue.

A. B.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Railway Workshops Programme

Of the eight workshops which serve different parts of the railway system, six are still on sites selected by pre-Union railway administrations. It was decided some years ago to begin a comprehensive building programme, involving in certain cases the erection of modern shops on new sites. In present world conditions the programme must be spread over about 10 years, but there are immediate building priorities for the wagon repair and wheel shops at Salt River; preparation of the ground for new shops at Cambridge in place of the present East London shops; doubling of the shop capacity for points and crossings, signal gear, and permanent way reclamation at Bloemfontein; removal of the carriage and wagon shops at Durban to Rossburgh; additions to and re-organisation of wagon shops at Germiston; and the removal of the locomotive ships at Pretoria to Koedoespoort.

RHODESIA

Traffic from New Steel Works

Production at a new steel works at Que Que is expected to begin in April, and by the middle of the year products railed should approximate 2,200 tons a month.

Railways Meet Famine Threat

Southern and Northern Rhodesia were threatened recently with a famine owing to an acute shortage of maize—the staple food of the large native population. In the course of relief traffic, the railways handled nearly 5,000 tons of maize and maize meal via Mafeking, and nearly 2,000 tons via Beit Bridge, between January 20 and 24.

Working Results

During the seven months ended October 31 last, total earnings of the Rhodesia Railways system amounted to £4,891,361, an increase of £500,000 compared with the same period in 1946. Operating expenditure, however, increased by £645,173 to £3,761,195, leaving a net operating revenue of £1,130,166, which was £139,090 less than for the same period in 1946.

Railway Members of Development Commission

Sir Arthur Griffin (General Manager of the Rhodesia Railways) and Mr. J. S. H. Grant (Chairman of the Railway Commission) have been appointed members of a development advisory commission which is to play an important part in determining the future economy of Southern Rhodesia.

TANGANYIKA

Railway Facilities for Groundnuts Scheme

In connection with the planting of seven small trial groundnuts plots in the Kongwa area early last year, a new branch line, 16 miles in length, has been built from Msagali, on the Central Tanganyika line, to Kongwa. The main producing area under the British Government's East African Groundnuts Scheme will be in Southern Tanganyika, and in order to handle the produce it has been decided to build a port with deep-water berths at Mikindani, south of Lindi. Work has begun on building the port, and a railway

line, 120 miles long, which will connect Mikindani with the area to be developed. It is hoped that the first berth at the port will be completed by the end of this year. In the meanwhile, a temporary lighterage quay is being built on Lindi Creek, and the section of the new railway running from Lindi up the Lukuledi Valley will be used for conveying supplies and equipment to the producing areas as soon as it is ready for traffic.

DENMARK

Copenhagen Suburban Traffic

Plans for the future underground railway system in Copenhagen are now taking shape, and shortly about 1 km. of the existing electrified line from Vanløse to Hellerup will be equipped with a third



Copenhagen suburban routes

rail, in order to gain experience with this form of current supply, which will be used on the underground system.

The electrification of the line from Vanløse to Ballerup (10.5 km., 6½ miles) has been much delayed by the war, but is now nearing completion, so that it is hoped that the line can be opened for electric traction in December this year.

At the same time earthworks in connection with electrifying the line from Copenhagen to Glostrup (7.3 km., 4.5 miles) are being carried out. At present this is double-track, but when electrified will have four and three tracks on different sections (see *The Railway Gazette* of February 1, 1946). It is likely that the electrification will be extended to Taastrup (6.3 km., 3.9 miles from Glostrup). Local traffic between Taastrup and Roskilde will then be by diesel trains. In addition an extension of the Copenhagen-Klampenborg electrification to Springborg (2.9 km., 1.8 miles) is now being considered.

New Suburban Line

The Danish State Railways have evolved plans for a new suburban line running south-west from Copenhagen along the coast. The plans have been approved by the localities concerned and by a traffic committee set up by the city of Copenhagen. The line will form part of the future network of suburban and underground lines. It is the intention of the State Railways to ask the Rigsdag for powers to acquire the necessary land for this line by an appropriation this year.

The cost of the land required is estimated at Kr. 3 million.

The new line, which will be double-track, is expected to run to Greve, about 21 km., or 13 miles, and later to be prolonged to Solrod (6 km., 3.7 miles further).

FRANCE

Train Cuts Restored

The S.N.C.F. has rescinded its recent decision to withdraw certain train services in order to economise coal (see *The Railway Gazette* of February 6). Twenty expresses, which were taken off or run less frequently, have resumed normal running.

Freight Traffic Increase

S.N.C.F. freight traffic showed a substantial increase in 1947. Wagons loaded rose to 13,563,413, compared with 12,174,491 in 1946. The greatest rise was in the Eastern Region, with 3,275,276 tons, against the previous 2,732,740 tons. Next came the South-Eastern Mediterranean Region, with 3,028,610 tons against 2,708,731 tons. The Northern, Western, and South-Western Regions also showed considerable gains, with 2,500,000, 2,560,000 and 2,148,000 tons respectively. Loadings reached a maximum in the week ending October 31, and fell to a minimum (110,580 wagons) during the strike in the week ending December 5. Comparative monthly average, pre-war and post-war, loadings are:—

1938	...	1,294,000
1946	...	942,180
1948	...	1,030,000

It may be noted that during 1947 the average wagon load was increased to 11.4 tons, against 9 tons in 1938. On this basis the 1947 average monthly tonnage, excluding S.N.C.F. service loadings, works out at 11,750,000 tons. This figure is 7 per cent. in excess of the 1938 monthly average of 11,000,000 tons.

In the Monnet Plan for French post-war recovery, the target for S.N.C.F. freight traffic in 1947 was set at 160 million tons. The actual traffic for the year was 141 million tons. Making allowances for the strikes which paralysed railway traffic last summer and at the year end, it may be estimated that 90 per cent. of the target set by the Monnet Plan was reached.

CANADA

Refrigerator Vans for C.N.R.

The C.N.R. shops at Transcona, near Winnipeg, have been allotted a programme of building refrigerator vans valued in all at \$4,500,000. The assignment is expected to enable the plant to operate at full capacity until the end of the year. Materials to build 300 ordinary and 50 express refrigerator vans have been obtained. The latter are said to be the first of their kind to be built in North America, and will be allotted to fast passenger trains carrying perishable commodities from the West Coast and the Prairie Provinces.

Sale of Wagons to Argentina

More than \$4,000,000 in United States funds will come to Canada as a result of the sale to Argentina by the War Assets Corporation of about 1,500 broad-gauge railway flat wagons built during the war for the Russian Government, which became surplus at the end of hostilities. A W.A.C. statement said that in September 1,000 of these wagons were sold for \$2,200,000 United States currency, with an option on the purchase of the remaining 500 for \$1,100,000. That option now has been exercised.

A stipulation of the sale is that conver-

sion of the wagons to Argentine requirements will be carried out in Canada and paid for in United States funds. The wagons were built in Canada under mutual aid, and all except about 300 were at Vancouver ready for shipment to Russia when the war ended and the order for them was cancelled. The remainder were at Trenton, Nova Scotia. It is presumed that the wagons will be used on the broad-gauge lines of the Argentine State Railways in Patagonia, or on the Rosario-Puerto Belgrano Railway (purchased by the Argentine Government in 1946).

VICTORIA

Tenth Anniversary of "Spirit of Progress"

Last year the Victorian Railways celebrated on November 23 the tenth anniversary of the placing in operation of the "Spirit of Progress" streamline train between Melbourne and Albury, which forms a link in the Melbourne-Sydney route. Throughout its history the train has been hauled by four "S" class locomotives, which were built between 1928 and 1930. Their total running on all types of traffic has aggregated 4,291,192 miles. In its ten years of daily operation, it is reckoned that nearly 3 million passenger journeys have been made in the "Spirit of Progress" train, and nearly 1½ million meals have been served in its dining car. A description of the train was given in the Special

Overseas Number of *The Railway Gazette* dated November 24, 1937.

INDIA & PAKISTAN

Branch Line Link in Pakistan

As a result of partition, the Eastern Bengal Railway has been left with the broad gauge branch line from Bongaon Junction to Khulna isolated from the rest of its system and any movement to or from this line must be made over the East Indian Railway via Ranaghat Junction. To overcome this difficulty the Railway Department has sanctioned surveys to join this branch line from Jessore to the main line at a point south of Poradaha; or from a point near Singin in a north-easterly direction to Bhatipara, the terminus of another broad-gauge branch situated on an inlet from the Bay of Bengal.

Coal Transport Committee

It is understood that the Government of India intends to set up a Coal Transport Advisory Committee, under the chairmanship of Sir S. N. Roy. The committee will consist of 12 members, including the Coal Commissioner to the Government of India, the general managers of the E.I.R. and the B.N.R., and representatives of shipping companies, colliery owners and labour. It will have its headquarters in Calcutta, and will meet weekly to review coal movement during the preceding week and prepare a tenta-

tive programme for the next week. Clearing of the transport bottleneck in the colliery areas of Bihar and Bengal is expected to be a first step towards solving the problem of coal shortage, which affects production throughout the country.

Chief Commissioner's Broadcast

Some illuminating statistics were given by Mr. K. C. Bakhle, Chief Commissioner of Railways in India, in his recent broadcast (see *The Railway Gazette* of February 20). In the gazetted cadre, Indians today hold 63 per cent. of the posts in the administrative and 87 per cent. in the executive grades, as against 68 per cent. of all gazetted posts in 1945. In the Class 2 services, the percentage of Indians is 93, while the Class 3 and 4 services, which comprise non-gazetted staff, are almost 100 per cent. Indians.

Referring to the suggestion that the wage bill of the railways should be reduced, Mr. Bakhle said that 94 per cent. of the total bill for all railways represents the wages paid to Class 3 and 4 employees, whose number was about 800,000. He said that their standards were set by the Central Pay Commission's scales, and the Government could not reduce these salaries, nor had it any desire to do so. Real economy would come only when output improved.

Answering criticism regarding overcrowding, the Chief Commissioner observed that passenger traffic had increased since 1939 by 96 per cent.

Publications Received

Great Northern Locomotives: 1847-1947.

By R. A. H. Weight, Hastings, Sussex: Published by the author at 198, St. Helen's Road. 8½ in. by 5½ in. 80 pp. Illustrated. Paper covers. Price 4s. 6d.—The author has succeeded in giving a coherent survey of G.N.R. locomotive design from the first 2-2-2 tender engines built for the G.N.R. by Sharp Bros. & Co., to the eventual development and modification of G.N.R. designs under the L.N.E.R. Though due prominence is given to such essential details as dimensions, dates, and classes, in a summary such as this it was necessary to omit certain constructional and performance details; in most cases, principal dimensions are those announced or recorded by the G.N.R.

Gradients of the British Main-Line Railways.—London, 1947: The Railway Publishing Co. Ltd., 33, Tothill Street, Westminster, S.W.1. 9½ in. × 6½ in. Price 10s.—Since the previous edition of this book appeared in January, 1938, the whole of the plates have been redrawn, and the present issue represents a complete revision of the preceding editions. Many additional routes have been inserted for the first time, including the whole line between Shrewsbury and Newport, some additional Southern Region lines providing alternative routes between London and the coast, and various sections in Scotland. A change has been made in the classification of speed restrictions, which now appear under three headings to cover those of 60 m.p.h. and over, which were introduced before the war on routes traversed by high-speed trains. The lines of the systems appear under their pre-nationalisation titles, but the possibility of some re-routing being effected under unified ownership has been provided for by the inclusion of certain additional sections of line.

The side of the track on which mile-

posts are situated on all lines represented in the book is shown in a preliminary table. In the case of the L.M.S.R., the location of the posts, with the zero point from which distances are measured, are shown also on the plates themselves. A system of cross-indexing facilitates the tracing of cross-country journeys, and connecting routes. All who are interested in the recording of locomotive performance, and in the topography of the British main lines, will find this book in its latest form a valuable companion on their railway journeys.

Locomotives of the L.M.S.: Official Illustrated List of all L.M.S. Locomotives specially arranged for Engine Spotters.

Obtainable from the London Midland Region (Advertising and Publicity), Euston House, N.W.1. 7½ in. × 4½ in. 312 pp. Paper covers. Price 2s. 6d.—The extensive rejuvenation of interest in locomotive spotting, which took place during the war, has not proved to be short lived, and to cater for this continued enthusiasm among our youth, the L.M.S.R. has produced a 312-page book primarily intended for engine-spotters. Contained in this attractive book are a list of L.M.S.R. named engines, an illustration of each type of locomotive in service on the L.M.S.R. at May 1, 1947, and a separate classified list of L.M.S.R. locomotives, with provision for the spotter to record the depot of the engine, and where and when it was observed.

We Fought the Miles. Published by authority of the General Manager of the South African Railways & Harbours Administration. 10½ in. × 8½ in. 120 pp. Illustrated. No price stated.—Produced with all the art that the layout expert can command, this book records the wartime achievements of South African railwaymen on the home and more distant fronts. Of the many chapters covering all forms of transport and even the manufacturing

activities carried on by the South African Railways & Harbours Administration, particular interest attaches to the description of the engineering feats in connection with the building of the Haifa-Beirut railway which, in combination with the Australian-built Beirut-Tripoli line, completed the link between Europe and Cairo. To avoid a long gradient and extensive tunnelling, the line was built along the coast. At one point the only way to do this was by fabricating concrete blocks of 15 to 100 tons in weight on a cliff top, then tipping them into the sea to form a sea wall. In another sector, to save the time which tunnelling would have required, a ledge 20 ft. above sea level was cut in the cliff face. In addition, the work involved the cutting of two tunnels and the building of seven major and eight smaller bridges, and 98 culverts.

Surface Finishing of Aluminium and its Alloys.

This booklet, No. 13, issued by the Aluminium Development Association, 33, Grosvenor Street, London, W.1, opens with descriptions of the processes of cleaning and degreasing aluminium and aluminium alloy surfaces before final finishing, and emphasises the importance of thorough preparation. Actual finishing processes are divided into four groups, namely, chemical and mechanical processes, electro-plating, and paint finishes. Mechanical processes cover grinding, sand and shot blasting, scratch brushing, barrel polishing, and hammer finishing, but here as in other sections modifications rendered necessary by characteristics of the materials are clearly indicated. The second section includes the MBV process and colouring of the film so produced. Electro-plating is given the lengthy treatment its importance justifies and special surface preparation is described. Under paint finishes, emphasis is laid on the importance of careful pre-treatment, and the main part of the text concludes with the lacquering and other finishing processes.

Pneumatic-Tyre Trains for France

Six-coach sets of the Michelin type under construction for the French National Railways

TRAINS of six coaches, fitted with pneumatic tyres, are now being built to the order of the French National Railways (S.N.C.F.). They are to run daily between Paris and Strasbourg at an average speed of 60 m.p.h. Construction of the coaches is advanced sufficiently for the S.N.C.F. to contemplate placing them in service this year. The trains will be very light, having a tare weight of 102 tons, and a loaded weight of 126 tons.

Michelin railcars, ever since the first was run in 1931, have proved a practical

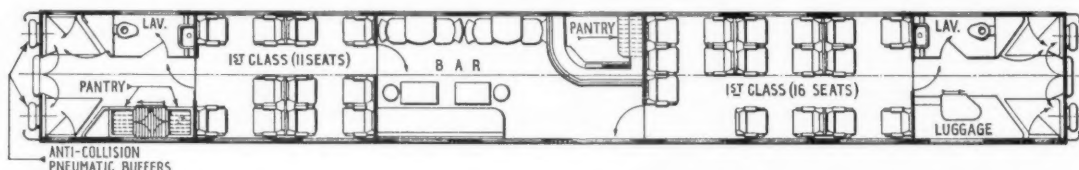
coaches for their operating requirements. Three six-coach trains are in preparation.

Each train comprises one composite coach (van and 48 second class seats); two second class coaches, 64 seats each; one dining car to seat 48; one coach with refreshment bar and small tables, also seating 27 first class passengers; and one first class coach, 46 seats. Apart from the dining car, the train thus has 249 seats. The coaches have a central corridor and fluorescent lighting. The decorative scheme is in bright colours. Heating and

lightweight construction, since, by absorbing shocks and vibration, they render possible the use of smaller steel sections in the bogies and underframes; and also, by suppressing pounding at rail ends, they make it possible to simplify and lighten anti-noise devices.

Three different methods of bodywork construction are being used. In one train, the bodies are being built on the Budd stainless steel principle, 18 per cent. chromium and 8 per cent. nickel, and welded. In the second train, rivetted duralinox (an aluminium alloy) is employed. The third train has welded bodies of mild steel. Simultaneous operation of these three types is expected to yield data likely to aid future developments.

The bogies of the three trains will be



Internal arrangement of a first class coach with refreshment bar

success, providing noiseless and smooth running greatly conducive to the comfort of passengers. The first car had only 24 seats. In others the seats were successively increased to 36, 56 and 96. The total seating accommodation in the six-coach trains will be about 250. In view of the experience gained, the Michelin firm proposed the extension of the use of rubber tyres to complete trains. The S.N.C.F. approved the proposal, and has collaborated with the builder in adapting the

ventilation are regulated automatically by forced air and blower fans.

At the outset, non-streamline steam locomotives will haul the trains. Later, streamline diesel-electric locomotives, now on order, will be used. The load on each pneumatic tyre in the coaches is limited to one ton. Consequently, they are of very light construction, and mounted on two 5-axle bogies. The tare weight of each coach is 17 tons.

The use of Michelin tyres facilitates

of identical construction in high tensile steel. The suspension is such that in the event of a tyre failure, the coach can continue to run for some time without slowing down. This result is obtained by a compensatory balancing system, which distributes the load over four axles only in case of failure of one axle in a bogie. To maintain electrical continuity for operating signals, all coaches are fitted with metal shoes in permanent sliding contact with each running rail.

Steel Castings for Locomotive Parts

Reducing the weight of components without sacrificing reliability or service life

WITH the exception of the war years, wheel centres for locomotives normally have been made as steel castings, and hitherto as many as 200 castings, weighing from a few pounds to 45 cwt. each, have been specified for the construction of one locomotive unit. Today, some designers favour the fabrication of certain parts on the assumption that fabricated structures are lighter in section than steel castings, and, therefore, that the total weight of the structure is less.

It is not always realised, however, that by bearing in mind modern methods of production, co-operation between the designer and the foundry frequently can result in a steel casting of as simple and straightforward a design as a fabricated structure and of no greater weight or cost. Such castings have the advantages of greater reliability in service, less likelihood of buckling in the event of a collision or derailment, and saving in production time.

A much closer approximation to the theoretically ideal stress distribution can be obtained with castings, due to the varying thickness of metal that can be incorporated in the design, whereas a fabricated structure usually necessitates, at best, to some extent a "stepped" stress gradient. This closer approximation to the ideal results in increased strength and improved damping capacity.

The question of welding steel castings

for fabrication needs some clarification as the desirability and even the possibility of welding has been questioned by some locomotive engineers. This, presumably, is based on experience of welding cast iron, but, in point of fact, a considerable amount of steel castings of both light and heavy section are welded where intricacy of design, cost, or other considerations make it desirable. In fact, welded castings, or castings welded to structural sections, frequently bridge the gap between fabricated rolled sections and single-piece castings.

Steel castings at times also can be used with considerable economy for components usually specified as forgings. For example, when examining the detail of a recent contract for a large quantity of forged locomotive crossheads, it was found that it was impossible to forge, even approximately, the desired shape. Consideration was then given to producing the parts by oxy-cutting, milling, etc., from a forged-steel slab. Even this method, however, necessitated much waste of material, and involved a large number of man-hours to reduce the 12-cwt. slabs to a finished weight of 1½ cwt.

It was then decided to substitute a steel casting for the forging, and in this case the weight of the black casting was within 7 lb. of the finished weight of the cross-head, and delivery of 200 was made within

two months, thus achieving a valuable saving of time and material without loss of reliability.

A Contract for Steel Cylinders

A further instance of economy in weight by the use of steel castings was shown in a contract recently placed in this country by the New Zealand Government for 40 locomotives, specifying steel instead of cast iron for the cylinders. These cylinders were fitted with cast-iron liners, which may easily be replaced when worn, thus enabling the cylinder castings to last the lifetime of the locomotive. Such an application of steel castings is novel in Great Britain, and it showed a saving in weight of nearly 25 per cent. compared with an unlined cast-iron cylinder; compared with a lined cylinder an even greater saving in weight would be effected.

The intrinsic properties of cast steel are worth considering in such cases. The tensile strength, ductility, and impact strength of steel castings are considerably higher than those of cast iron, and, therefore, cylinders of the former material are less liable to failure under sudden shock; also, in the event of serious damage, repair can be effected on the spot by electric welding, which is not possible with cast iron.

SOUTHERN REGIONAL CONFERENCE.—Mr. John Elliot, Chief Regional Officer, Southern Region, British Railways, held the third of a series of regional conferences with all grades of the staff at Salisbury on February 12.

Surge Protection by Means of Capacitors

An investigation of the overvoltage conditions arising on overhead d.c. traction systems during atmospheric disturbances

W. G. Hawley, A.M.I.E.E. and F. B. Kitchin, B.C.E. (Melbourne)

AN overhead traction system, like an overhead power transmission line, is susceptible to high overvoltages during atmospheric disturbances. The surges resulting therefrom are a source of danger to electrical equipment connected to the system, and it is becoming quite common practice to instal surge protective apparatus at vital points of the system.

Capacitors are one such form of protection. In designing a capacitor installation for use with a given system, it is necessary to choose hypothetical surge conditions, not less onerous than the worst conditions likely to be encountered in practice; and to relate the capacitors to the surge impedance of the system. Both aspects are dealt with in this article, and in particular, the authors show that over-estimation of surge impedance may have been contributory to service failures of capacitors in the past.

The surges themselves may originate anywhere on the system, and may, of course, have a variety of shapes, ranging from a short wave of high amplitude to a long one of low amplitude, any one of which is capable of causing injury to the equipment. Those that arise at the actual point where equipment is connected naturally are the most dangerous, but apart from the fact that the great majority will originate at other than these points, it obviously is uneconomical to cater for such a contingency.

Hence, in having to analyse the protective effect of a capacitor, it is usual to restrict the applied surge to one originating

at a point remote from the capacitor, i.e., to a travelling wave, and to select a waveform generally representative of an onerous condition. For this purpose, therefore, a wave of the mathematical form $e = Ee^{-\alpha t}$ is commonly adopted, where E is the wave amplitude and α is the decrement factor, which determines the time to half-value of the wave-tail. The factor α is easily obtained by dividing $\log_e 2$ (i.e., 0.693) by the time (in seconds) to half value. For instance, if the half-value time is 50 microseconds, then $\alpha = 1.386 \times 10^4$.

Capacitors for use as surge protective devices are designed generally, especially in the United States, to have a capacitance value of $4\mu F$. A surge being propagated along the system towards the capacitor has to traverse the surge impedance of the system, to which has been assigned the value

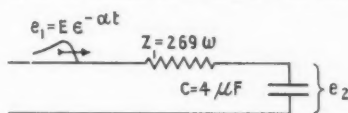


Fig. 1—Equivalent circuit diagram

of 500 ohms. In the authors' view, this value is too high even for an ordinary transmission line conductor, and more so for a traction system comprising two or even three wires, all electrically connected by droppers.

The method of determining the surge impedance is given in the Appendix. The

effect of the lower surge impedance value is to cause a greater proportion of the incident surge to appear across the capacitor; and while there may be other reasons for protective capacitors having failed in the past, the authors are of the opinion that a contributory factor has been the use of an unduly high surge impedance value as a basis for design.

The problem, now, is to determine the voltage e_2 (see Fig. 1) that would appear across a capacitor C located at the end of a traction system having a surge impedance Z_1 when subjected to a travelling wave voltage e_1 .

Since Fig. 1 represents a simple potential divider:—

$$e_2 = \frac{Z_2}{Z_1 + Z_2} \cdot 2e_1 = \frac{2e_1}{pCZ_1 + 1} \quad \dots (1)$$

where $Z_2 = 1/pC$, the numeric 2 being introduced to account for the "wave-doubling" effect at a line termination.

Now, since $e_1 = Ee^{-\alpha t}$, then:—

$$e_2 = \frac{2Ee^{-\alpha t}}{pCZ_1 + 1} = \frac{2E}{C[Z_1 p + \beta]} e^{-\alpha t} \text{ where } \beta = 1/CZ_1$$

Shifting $e^{-\alpha t}$ to the left by Heaviside's operational method:—

$$e_2 = \frac{2E}{CZ_1} \cdot e^{-\alpha t} \frac{1}{p - \alpha + \beta} = \frac{2E}{CZ_1} e^{-\alpha t} \frac{Y(p)}{Z(p)}$$

The solution, using the expansion theorem, is:—

$$e_2 = 2E \cdot \frac{\beta}{\alpha - \beta} \cdot (e^{-\beta t} - e^{-\alpha t}) \quad (2)$$

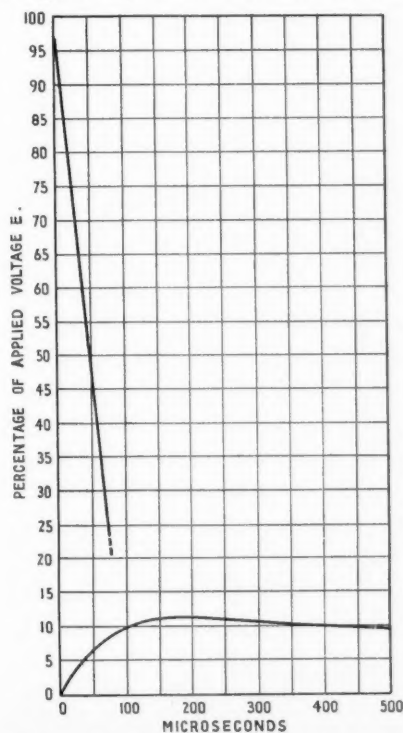


Fig. 2—Graph showing the effect of a $4\mu F$ capacitor on a 0.50 microsecond wave

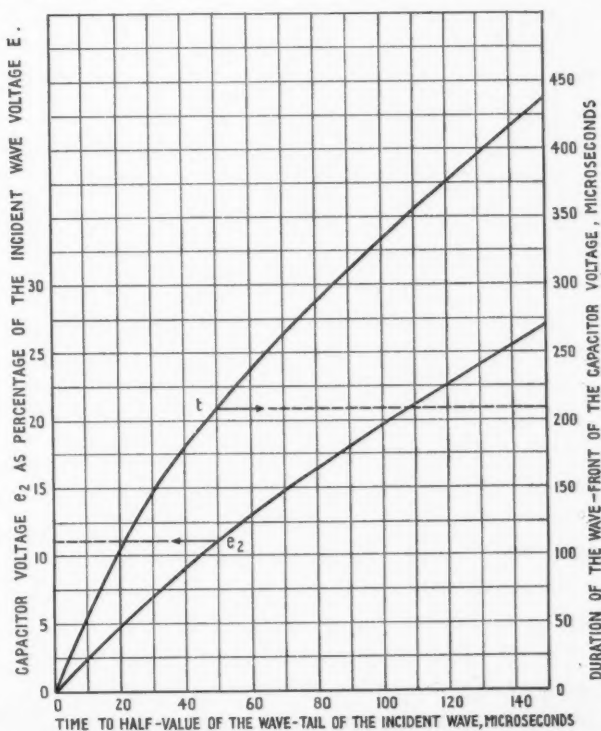


Fig. 3—Effect of tail of infinitely steep wave incident on $4\mu F$ capacitor connected to end of typical traction system

As an example, consider the case of a 0.50μ sec. wave, of the form $e_1 = Ee^{-at}$, the value of a being 1.386×10^4 .

Let $C = 4 \times 10^{-8}$ F, and, as shown in the Appendix, let $Z_1 = 269$ ohms.

Inserting these values in equation (2):—

$$e_2 = 0.1443 (e^{-9.38 \times 10^4 t} - e^{-1.386 \times 10^4 t}) \quad (3)$$

To find the time taken by the capacitor voltage e_2 to attain its crest value, differentiate the bracketed term in equation (2) and equate to zero, whence $\alpha e^{-at} = \beta e^{-\beta t}$, which gives $t = 208.5$ microseconds. On substituting this value for t in equation (3), it will be found that e_2 (max.) = $0.111 E$, which means that under the conditions stated the capacitor has to withstand 11.1 per cent. of the applied incident voltage wave. Suppose the "weak-link" insulation of the system were to permit a surge potential of 100 kV. to be present on the track conductor, then a wave having a crest value of 11.1 kV., and of the shape shown in Fig. 2, which is a plot of equation 3, would appear across the capacitor.

Due to the low order of surge impedance actually obtaining, the capacitor voltage given above is higher than would have been obtained by using the value hitherto accepted.

Fig. 3 shows the calculated surge voltages that would appear across a capacitor at the end of a typical traction system, on the application of waves having different tail lengths.

APPENDIX

Determination of the Surge Impedance of a Typical Traction System

Fig. 4 (a) shows diagrammatically the profile of a span length comprising the contact wire, which may be regarded as straight; the auxiliary catenary, which is practically straight; and the main catenary which when loaded as shown, is a parabolic curve. The average height of the latter is equal to its mid-span clearance plus one-third of the sag, so that the dimensional constants of the conductor system are virtually those shown in Fig. 4 (b).

Calculation of Impedances

With the same potential applied simultaneously to all three wires, the following set of linear equations obtains:—

$$\begin{cases} e = Z_{11} i_1 + Z_{12} i_2 + Z_{13} i_3 \\ e = Z_{21} i_1 + Z_{22} i_2 + Z_{23} i_3 \\ e = Z_{31} i_1 + Z_{32} i_2 + Z_{33} i_3 \end{cases} \quad (4)$$

where $Z_{mn} = 138 \log_{10} \frac{m \cdot m'}{r}$

and $Z_{mn} = 138 \log_{10} \frac{m \cdot n'}{m \cdot n}$

$m \cdot m'$ being the distance between any conductor m and its own image in the ground; $m \cdot n'$ the distance between the conductor m and the image of the conductor n ; $m \cdot n$ the actual distance between conductors m and n ; and r being the radius of the relevant conductor.

If, as an example, we take $r_1 = 0.026$ ft., $r_2 = 0.0233$ ft., and $r_3 = 0.0303$ ft., then:—

$$\begin{aligned} Z_{11} &= 426.3 \text{ ohms; } Z_{12} = Z_{21} = 226.3 \text{ ohms} \\ Z_{22} &= 435.8 \text{ " } Z_{13} = Z_{31} = 158.5 \text{ " } \\ Z_{33} &= 425.6 \text{ " } Z_{23} = Z_{32} = 183.3 \text{ " } \end{aligned}$$

Impedance coefficients with equal subscripts are self surge impedances, and those with unequal subscripts are mutual surge impedances, and it will be noticed that Z_{11} , the self surge impedance of the contact wire, is, taken by itself, lower than the 500-

ohm value generally accepted. When taken in conjunction with other neighbouring conductors all at the same potential, we have, solving for i_1 , i_2 and i_3 in equations (4):—

$$\begin{aligned} i_1 &= 0.1236 \times 10^{-2} \cdot e \\ i_2 &= 0.1036 \times 10^{-2} \cdot e \\ i_3 &= 0.1433 \times 10^{-2} \cdot e \end{aligned}$$

and the combined surge impedance being

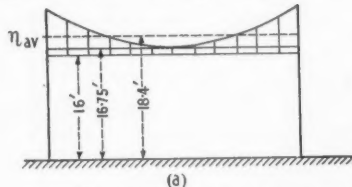
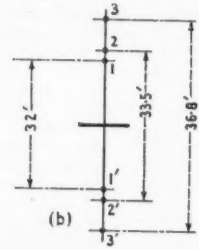


Fig. 4—Dimensional constants of typical overhead traction system



Progress of Electrification in Sweden

Dates of opening principal routes

NEXT to Norway and France, Sweden has greater resources in water power than any other European country, but is poor in coal, having only a few deposits in the southern provinces. As in Switzerland, this fact, coupled with the difficulties experienced in the war of 1914-18, which were repeated in 1939-45, induced the authorities early to turn their attention to electrification.

The first important trials of electric traction were made in 1908. For the first extensive application, choice fell on the 80-mile section of the Lapland ore line between Kiruna and Riksgränsen (Norwegian frontier), where the capacity of the single track had begun to be severely taxed. The decision to electrify was taken in 1910, and the whole section was working, on the single-phase system in January, 1915. (The Norwegian section of 24½ miles to Narvik was not electrified until 1923).

The next long section to be converted, between 1920 and 1923, was that between Kiruna and Svärton (189 miles), with two short ore traffic connecting lines from Gällivare to Malmberget and Koskullskulle. It was estimated that the capacity of the trains had been increased by 40 per cent., and their speed about doubled.

First Main-Line Conversions

After some time, the Government decided to electrify the main Stockholm to Gothenburg line, through Katrineholm and Falköping, as here the greatest savings in coal consumption per mile could be obtained. The electric service began operating throughout on May 15, 1926; the distance is nearly 286 miles. Almost immediately another extensive programme of conversion was adopted, and this has been steadily carried out to date.

In 1947 agreement was reached for the purchase by the State Railways of the Bergslagen Railways, which on February 18, 1946, had completed the electrification of their route from Gothenburg to Gävle, via Falun and Kil (354 miles). In addition there are about 270 miles of electrically-worked private railways, including secondary lines or light railways.

A further extensive programme of State Railways electrification, aiming at converting some 773 route-miles in the coming decade, was envisaged after the recent war, but was suspended on account of materials

$Z_t = e / (i_1 + i_2 + i_3)$, we find that $Z_t = 269$ ohms.

The authors' thanks are due to British Insulated Callender's Cables Limited, and to Dr. J. L. Miller, Chief Electrical Engineer, for permission to publish this article.

shortages early last year (see our January 10, 1947, issue). The following table shows the dates of converting the principal sections dealt with since 1932, and the mileage involved:—

Year	Section	Miles
1932	Hallsberg—Örebro ...	15.5
	Katrineholm—Mjölby ...	78.3
	Aby—Järna ...	67.7
	Falköping—Nässjö ...	70.2
1933	Hallsberg—Mjölby ...	59.6
	Mjölby—Malmö ...	225.5
	Malmö—Trelleborg ...	19.3
1934	Örebro—Krylbo ...	82.0
	Örebro—Ångelholm ...	44.7
	Stockholm—Uppsala—Krylbo ...	100.0
1935	Ångelholm—Halmstad ...	41.0
	Krylbo—Bollnäs ...	97.5
	Hälsjöholm—Veinge ...	44.7
1936	Bollnäs—Ånge ...	103.7
	Almedal—Boras ...	41.6
	Halmstad—Gothenburg ...	93.8
	Södertälje—Eskilstuna ...	62.1
	Skebo—Värnamo ...	14.3
1937	Hälsjöholm—Ångelholm ...	16.1
	Laxa—Charlottenberg ...	126.1
	Astorp—Mölle ...	23.0
	Kil—Fryksta ...	1.8
	Örebro—Svarta ...	30.4
	Tomtebodavärdan ...	5.0
	Skövde—Karlsborg ...	27.3
1939	Uppsala—Gävle ...	70.8
	Ånge—Bräcke—Östersund ...	63.4
	Bräcke—Långsele ...	54.0
	Gothenburg—Uddevalla ...	56.5
1940	Långsele—Mellansel ...	16.1
1941	Mellansel—Jörn ...	164.7
1942	Jörn—Boden ...	88.8
	Gävle—Ockelbo ...	23.6
	Ånge—Sundsvall ...	58.4
1943	Hälsjöholm—Hälsjöholm ...	47.8
1944	Esöv—Ramlösa ...	28.0
1945	Östersund—Järpen—Storlien ...	100.6
1946	Tomtebodavärdan—Kungälv ...	16.1
1947	Kungälv—Västervik ...	51.5
	Västervik—Frövila ...	52.0

From the outbreak of the war to the end of 1945, 115 new electric locomotives were put into service and the annual kilometres run by that type of engine rose from 39.5 millions in 1939 to 53 millions in 1944, traffic constantly increasing. Some express electric locomotives ran 24,000 km. (14,913 miles) a month. With the strengthening of the permanent way, heavier designs have been put into traffic. The class "F" engines are able to reach a speed of 135 km.p.h. (84 m.p.h.). Trains have been timed regularly since the 1946 summer timetable was introduced at 120 km.p.h. (75 m.p.h.) on the 148 km. (92 miles) between Alvesta and Esöv, on the Stockholm—Malmö line. It is intended to introduce some high-speed railcar type trains, with close-coupled stock, between Stockholm and Örebro, Linköping, and Gävle.

New Cars for Chicago Rapid Transit

First vehicles of a new series for elevated and subway services

DELIVERY has been made recently to the Chicago Rapid Transit Company of two cars of a new type for use on the elevated and subway lines. These vehicles are the forerunners of further cars of the same type after minor adjustments and modifications have been effected.

Each car is 88ft. 7½ in. in length, and consists of three compartments or sections, with a total seating capacity of 96. The body is of aluminium alloy, with a red stripe. Convex-concave side contours are adopted to allow of greater seat width; all windows are of safety glass.



The first of the new vehicles in service

[Photos]



Two-car set on elevated section alongside Lake Street

[C. E. Keevil]

Nîmes to Sète Electrification, S.N.C.F.

Further stage in conversion of the through route from Bordeaux to Marseilles, forming part of the S.N.C.F. 10-year electrification programme

ELECTRIFICATION was completed recently of the S.N.C.F. line from Sète to Nîmes (48½ miles), an eastwards extension of the existing electric route from the Spanish frontier via Dax and Toulouse. There is also continuous electrification from Paris to Sète, via Toulouse (584 miles), and in due course the line from Nîmes to Tarascon will be electrified to link up with the Paris to Marseilles main line now in the process of conversion. As was explained, with a diagram, in our November 8, 1946, issue, the Sète to Nîmes electrification is bracketed in the S.N.C.F. ten-year programme with that from Bordeaux to the Paris-Toulouse line at Montauban, so that eventually there will be electric traction throughout between Bordeaux and Marseilles.

The high tension supply for the Sète-Nîmes section comes at 60 kV., 3-phase, over a line nearly 50 miles long, supported approximately every 328 yd. by 78-ft. steel masts. The same line also supplies electric power for the towns of Montpellier and Nîmes. Five new substations at approximately 9½-mile intervals along the railway route convert the three-phase current to d.c. at 1,500 V. Each contains a 2,000-kW. mercury-arc rectifier designed to withstand an overload of 200 per cent. for 5 min.

The overhead contact line is of the standard type with an aluminium-steel catenary and two hard copper contact

wires, except near the coast, where the catenary is bronze to resist corrosion. In the same area the masts are concrete, but steel is used elsewhere.

All substations are remotely-controlled from Nîmes, with continuous indication of the condition of the equipment throughout the line. By the use of the carrier current system, the number of control circuits radiating from Nîmes has been reduced to two, and these are incorporated with the telephone cable serving the line, which has replaced the former overhead telephone wires.

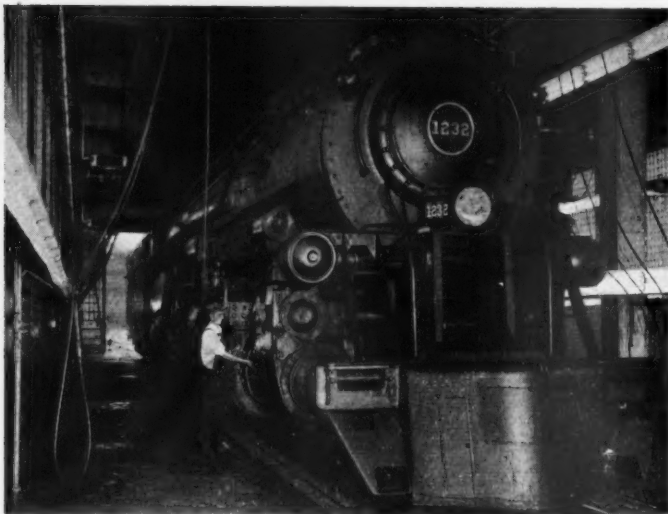
CIRCULATING WATER PUMPS FOR GREENWICH POWER STATION.—London Transport recently entered into a contract with Gwynnes Pumps Limited, of Hammersmith and Lincoln, for the supply and erection of three motor-driven circulating water pumps for installation at the Executive's Greenwich Generating Station. The new equipment is required to replace three existing pumps which were installed originally over 40 years ago, and the new plant will be of increased capacity in order to meet the greater output for which the station was being rehabilitated at the outbreak of war. Provision is being made also for replacing a fourth pump at a later date. Each new pump will be capable of delivering 20,000 gal. of water per min. against a total head of 50 ft., and

will be driven by a variable-speed, 400-volt, 3-phase, motor of 400 b.h.p. capacity, with a maximum speed of 425 r.p.m. The installation also includes a number of 30-in. dia. electrically-operated valves, together with a considerable quantity of pipework. The electrical equipment is being provided by Crompton Parkinson Limited, the rotating strainers by Richardsons Westgarth & Co. Ltd., and the valves by J. Blakeborough & Sons Limited, all acting as sub-contractors to Gwynnes Pumps Limited. The complete scheme includes also duplicate vacuum pumps for maintaining the water system free from air which may be drawn in during periods of low tide in the event of shipping disturbing the surface of the river in the vicinity of the inlet mouths of the suction piping. These pumps are being supplied by Alley & MacLellan Limited.

"ELECTRICITY FOR EVERYMAN."—Dr. P. Dunsheath delivered the Faraday Lecture, under the auspices of the Institution of Electrical Engineers, at the Central Hall, Westminster, on February 20, taking as his title "Electricity for Everyman." The lecture has as its primary object the increase of interest in electrical matters among the general public. Dr. Dunsheath surveyed the range of frequencies employed and their particular applications. Dealing with alternating current at 50 cycles, he reviewed certain basic phenomena now being used industrially, such as ripple control for street lighting, and the development of servo mechanisms to multiply human effort. Progressive increases in frequency led to the fields of telephony and radio, and to developments in induction heating.

A Service Station for Steam Locomotives

Improved running-shed facilities on an American railway help to increase locomotive availability



Servicing a locomotive at Williamson

WILLIAMSON is an important division point on the Norfolk & Western Railway, U.S.A., as it is on the boundary between the Pocahontas Division on the east and the Scioto Division on the west; it is also a marshalling point for coal traffic moving in either direction. Through merchandise trains change engines at this point, and it is, in addition, the terminus for two local eastbound trains and one westbound train daily. The number of engines despatched each day varies from 65 to 85.

The engine shed formerly comprised two buildings with 23 and 21 stalls respectively; each house had its own turntable. The usual ash-pits, coaling station, and inspection pits were provided, but the arrangement of these facilities and their connecting tracks was such that locomotives

frequently were required to make one or more reverse movements before being completely serviced. Further, as all lubrication was performed in the larger of the engine-houses, locomotives on their way to that house frequently were delayed by opposing outbound movements. The inspection pits were in the open, and were far apart, and the washing platforms were also widely separated. Ashes were handled at five locations, giving rise to excessive costs of operation and maintenance as well as complications in handling ash wagons.

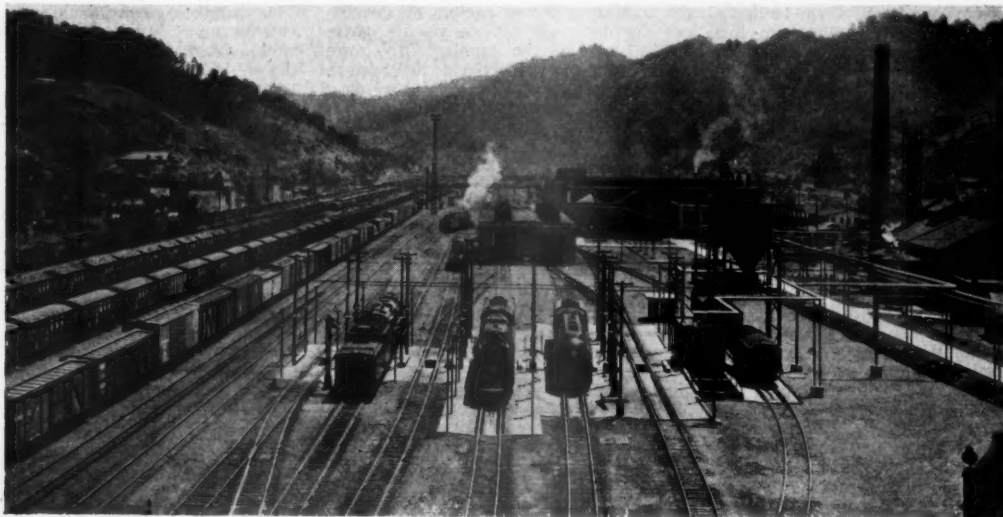
The new layout resembles the assembly line in a mass-production factory in that an incoming locomotive receives, progressively, the various services to prepare it for a return trip in the shortest possible time. The smaller engine-house and turntable, and the old washing platform, ash

hoists, and outdoor inspection pits therefore were replaced by a new double-track engine-service building and a combined washing platform, water station, and ash-handling plant were constructed. The existing four-track coaling station, being quite satisfactory, was not involved. With the new layout, servicing can be effected in 45-75 minutes, depending on the condition of the engine on arrival. Should any major repairs be needed, the engine is moved to the engine house.

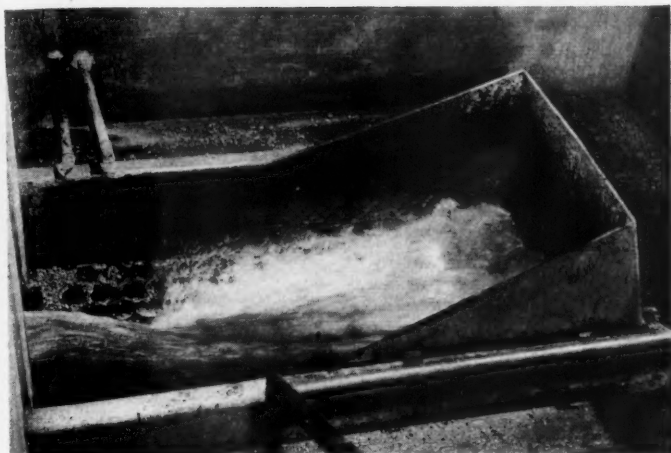
The chief feature of the new layout is the engine service building, 60 ft. wide and 165 ft. long, comprising a single large room of brick and concrete, with interior walls of glazed brick. The structure is well lighted by day, by large windows of glass blocks. The two service tracks extend through the building. At each end are electrically-operated overhead rolling doors, of corrosion-resistant aluminium alloy, and provided with push-button controls. Fluorescent lighting is provided in two continuous rows on each side of each track, one row being about 6 ft. and the other 15 ft. above floor level. The building is heated by thermostatically-controlled unit heaters, the condensate from which is returned to the power house for use as boiler feed water. Valve-type flat-roof ventilators, 10 ft. wide, remove locomotive gases; they extend practically the whole length of the building over each track.

In the service building are sixteen lubrication stations, four on each side of each track. Each station consists of several conveniently arranged hose-and-fitting assemblies connected to pipe lines attached to the ceiling. The various lubricants are supplied under pressure to the fittings on the locomotives. Oil is pumped from an oil house through steam-heated pipes direct to the mechanical lubricators, while grease is pumped from shipping containers which are placed in a stainless-steel cabinet. There is enough overlap on each length of hose to avoid any need for reversing engines in the building—all servicing can be carried out at one setting.

In general, six lubricants are provided at each station: valve oil for valves, cylinders, feed pump, air pump, mechanical stoker parts subjected to steam, and split-housing roller bearings; engine oil for driving-box pads and wedges, pony truck and trailing truck and tender bearings,



General view of Williamson running sheds, Norfolk & Western Railway, U.S.A.



Mixture of ashes and water flowing into sump at end of sluice trench of the hydraulic ash handling plant

crosshead guides, spring and brake-rigging pins and bushes, reversing shaft bearings, etc.; soft grease for valve gear parts, gudgeon pins, coupling rod pins, and friction wedges not equipped with mechanical lubrication; semi-fluid grease for roller bearings of the floating-axle type; hard grease for connecting rods; and extreme-pressure oil for coupling rods with roller bearings. Oil and soft greases are piped directly to the locomotive; hard grease is delivered by an air-operated grease-gun, which uses the grease in stick form. Certain stations have an extra hose for a special turbo-generator lubricant. The fittings on the various lines are so designed that it is impossible to use one type of lubricant where another should have been used—an important factor in preventing engine failures.

The three-track washing platform is 140 ft. long and is combined with ash-handling and water-supply facilities so that the three operations can be carried out simultaneously. Paraffin-base engine-cleaning oil is sprayed on to each locomotive moving on to the platform; it is washed off by sprays of water from one or more of the four standpipes adjoining the platform. During this time the fire is being cleaned and water is being taken.

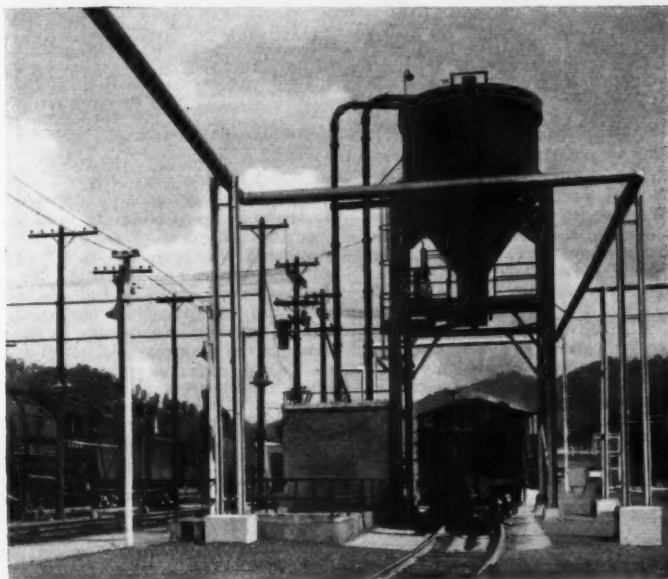
Ashes are dropped into concrete hoppers, lined with acid-resisting bricks and located between the rails. The floor of each hopper slopes downwards to a sluice trench, which extends transversely across the three tracks of the washing platform and across three additional tracks (also fitted with hoppers) to a sump. Water, flowing at high pressure through an 8-in.

ashes in the hopper rather than to wash them directly into the trench.

Each pair of nozzles is controlled by a quick-acting valve on the washing platform. Additional velocity is given by water from an 8-in. pipe to the mixture of ashes and water passing along the sluice trench to the sump.

Grids containing 4-in. dia. openings cover the sump and allow all ashes except large clinker to settle in the bottom. An 8-in. dredge-type pump, of about 1,200 gal. per min. capacity, conveys the ashes and water to an overhead de-watering bin with a capacity of 2,110 cu. ft. The surplus water is drained through louvres and passes out of the bin to a reservoir below ground level; it is then available for recirculation, thus making for a considerable economy in water. The ashes are dumped into cinder wagons in a commercially dry state.

The personnel required for servicing locomotives at Williamson is not large; headed by a gang leader, the force on each shift consists of locomotive inspector, two engine supply men, one box packer, and



Overhead de-watering bin receiving mixture of ashes and water pumped into it from the sump. From the bin, ashes are loaded into cinder wagons in a commercially dry state

supply-line, issues from two nozzles at each hopper and washes the ashes from the hopper into the sluice trench. The nozzles are so located as to undercut the pile of

one labourer in the engine-service building. At the washing platform are two fire cleaners, two engine washers, and one water man.

LONDON-LIVERPOOL AIR SERVICE TO END.—The British European Airways Corporation announces that the service from London (Northolt) to Liverpool and Manchester, will be withdrawn on April 17.

ENGINE NAMING CEREMONY AT WATERLOO.—Two new Southern Region "Battle of Britain" class locomotives, *Sir Archibald Sinclair* and *Biggin Hill*, were named by Sir Archibald Sinclair at Waterloo Station on February 24. Among those present were Mr. John Elliot, Chief Regional Officer, Southern Region; and Mr. O. V. Bulleid, who designed the locomotives. Also present were Mr. Geoffrey de Freitas, Parliamentary Under Secretary

of State for Air; Air Marshal Sir James Robb, Vice Chief of the Air Staff; and Sir Alan Mount, Chief Inspecting Officer, Ministry of Transport. Officers from Biggin Hill R.A.F. Station also attended.

STRIKE ON LEOPOLDINA RAILWAY.—Employees of the Leopoldina Railway in Rio de Janeiro staged a lightning strike at midnight on February 22-23, while negotiations in a wage dispute appeared to be proceeding towards a settlement. The Minister of Labour, Dr. Moruan de Figueiredo, declared that the strike was unjustified and that it was "definitely Communist-inspired." Reuters reports. After troops had occupied stations and

workshops on February 23, the Minister announced that the strike leaders had been arrested.

U.S. RAILWAY EARNINGS IN 1947.—The net income of U.S. railways last year was \$480 million, against only \$293 million in 1946, according to a statement by the Association of American Railroads. The higher revenues last year, however, were offset to a large extent by higher wages, higher prices for fuel and supplies, and a greater amount paid in taxes. Total operating revenues were \$8,684 million, compared with \$7,628 million in 1946, an increase of 13.8 per cent. Expenses increased by 6.9 per cent.

Rehabilitated Passenger Coaches for the North Western Railway, India

Extensive use of plastics and aluminium alloy castings are features of the first of a series of upper class coaches to be completed in connection with an initial post-war programme

*By N. C. Watney,
Officer for Special Duty (Carriage Building), N.W.R.*



THE first composite carriage to be rehabilitated in the workshops of the North Western Railway at Moghalpura, Punjab, recently has been placed in service, and represents the culmination of the work of the Carriage Research Staff over a period of 18 months. Mr. H. M. R. Morse, Chief Mechanical Engineer, N.W.R., accorded me a free hand for the design work involved.

As constructed, with a teak body framing reinforced by suitable gussets and knees and covered on the outside with coach panels, it was found after some 15 years of active service, that the body foundation, including the ferrous work, tended to deteriorate rapidly, and that preventive treatment on an extensive scale by thorough reconditioning was essential if constant and heavy repairs were subsequently to be avoided.

A system of reconditioning, whereby carriages are given a 100 per cent. examination and overhaul between the age group of 15-20 years and made fit for their remaining life of 15 years without further heavy structural repair, was instituted before the war, and has proved practically sound and financially justified. Though in no way eliminating the periodic heavy and light repairs through which the vehicles must pass during the remainder of their life, the maximum benefits are obtained from such attention given during reconditioning.

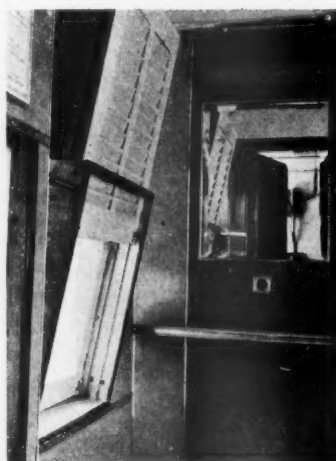
During the war, the scheme was suspended, but it is now being revived as men and materials become available, and as a post-war project has been extended to embrace complete modernisation of interiors and the installation of fittings specifically designed to offer greater passenger comfort, ease of operation, and, together with high resistance to theft, ease in maintenance.

Maximum Seating Comfort

The seating accommodation in the first class has been designed for maximum comfort, and for the first time the bench-type seat has given way to the individual and contoured seat complete with head

rests and folding arm rests. The whole is anatomically designed to approved standards and is not based on the need to consider its conversion to a bed. For this conversion the balanced back squab is pulled down as one unit over the seats to reveal a fully-sprung bed 3 ft. wide. Simultaneously with this movement the bottom seats move rearwards as one unit to afford the necessary clearances for the back squab cushions and head rests.

The upper berth folds flush with the



Pivoted window pan with frame partly withdrawn

wall and requires no catch to retain it in position. It is of the semi-balanced type which on opening automatically sets up a protection rail at the head end. A full-size mattress 4 in. thick is provided, which in common with all the upholstered work can be removed as a self-contained unit without disturbing the main installations, these being fitted in such a manner that no nuts and bolts, set screws, etc., are

readily visible. Thus, the interior is smartened up, and at the same time the whole is rendered more thief-resisting. Upholstery coverings are in antique ivory imitation leather piped in green.

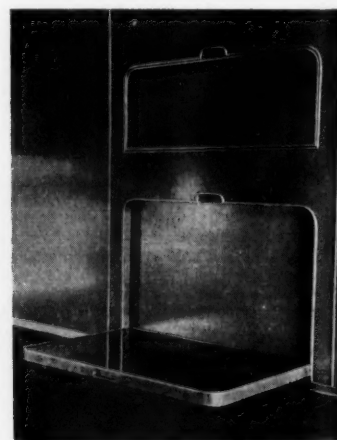
Aluminium alloy castings have been used extensively, and seat pedestals, upper and lower berth frames, bed protection rails, bed ends, door lock bodies, wash-basins, hat and coat hooks, toilet swing windows, main compartment window pans, alarm pull assemblies, and ventilator covers are made in this material.

Safety Devices

Special attention has been given to safety devices operated by the passenger, such as door locks and window locks, and the arrangements now fitted ensure that all safety requirements are met. Each of the three window frames in each pan is fitted with specially developed spring-operated finger locks which are attached in such a manner as to strengthen the window frame corner joints and be tamper-proof. These frames operate in a unit window pan with integral runners and lock registers, thus solving problems arising from warped timber, loose wood screws, and ineffective maintenance. The window pans, complete with their three windows, are pivoted at the base, and by the removal of four machine screws can be swung 60 deg. inwards to permit of any window being withdrawn upward and replaced in a few seconds.

Spring-operated slam locks have not been used before on N.W.R. stock, and in the present instance they have been designed to incorporate as an integral feature the usual "throw-over" lock for passengers and the guard's private door lock, which normally are separate installations.

The elimination of wood screws for internal fittings was essential, and throughout the design these have been entirely dispensed with wherever replacement may be required for maintenance. At the same time, opportunity was taken to avoid



Flush fitted tables in first class coupé

the use of paint in the internal decoration by the utilisation of anodised aluminium fittings and coloured plastic panels.

An extensive survey of possible alternatives to teak wood panelling—then in short supply—led to the decision to utilise plastic wall panels supplied in sheets $\frac{1}{8}$ in. thick to colour specified by the Administration. The colour scheme of sea-green



First class coupé for day use



First class coupé for use at night

wall panels, with a 6 in. floor border of black plastic and cream-coloured plastic for the ceiling, gives an appearance of spaciousness, and the method of fixing by anodised aluminium mouldings gives a clean and satisfying appearance.

The first class toilet is panelled from waist rail upwards, including the ceiling, in cream Waverite laminated plastic panels, and the non-folding wash bowl is set in a shelf of black Waverite sheet. The second class compartment is panelled up to the waist rail in composition hard-board with sea-green plastics sheet above, and for the ceiling with the same methods of attachment as for the first class. In the toilet compartment attached to the second class a further innovation is the provision of special linoleum fixed to the wall by adhesive and trimmed with aluminium beadings. All the Waverite panels

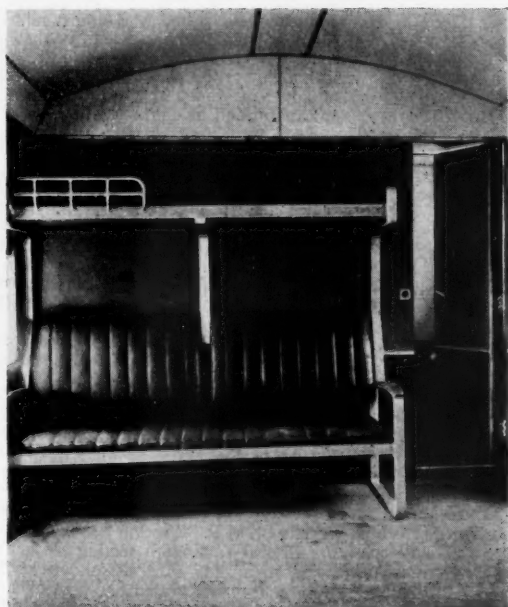
have an "eggshell" finish, and by suitable sizing required no pre-forming for the ceiling attachment.

The second class compartments, though more austere than the first class, have been given equal attention in the matter of safety and the standard of comfort. The window and door locks are common to both classes, as are the special thief-resisting basin taps and other equipment in the toilets.

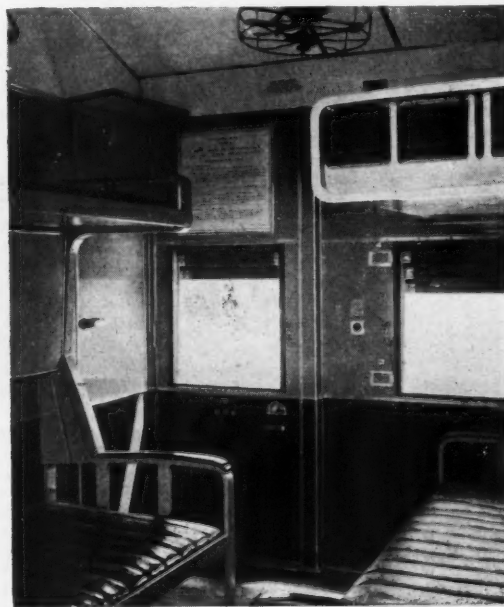
In the seating and berthing arrangements several innovations have been made. The top berth is now permanently fixed in the sleeping position following its universal use as a heavy-luggage rack and consequent excessive maintenance. On the other hand, it has been practicable to widen the berth and fit a protection rail at the head end, which permits more freedom of movement.

For the seated passenger there is a full-length back squab so positioned in relation to the seat that a more anatomically correct posture is possible. To convert this arrangement to a bed, the back squab, which is hinged at the top, is lifted up to reveal a mattress 2 ft. 6 in. wide. For ease of operation the back squab is divided into two sections held securely by catches attached to the underside of the top berth frame when in the sleeping position. Plain green imitation leather cloth covers the upholstery work.

Electric lighting fittings also are designed to be thief-resisting. Switches are recessed behind cast-aluminium covers and all light-shades installed on panels are attached from the rear and show no visible fittings. The general illumination is of normal pre-war scale, but with a re-location of position for optimum results.



Second class four-berth compartment in day use



Compartment with back squab raised for night use

G.W.R. Developments in Maintenance Equipment—12*



The Johnson Balanced Power Rammer is manufactured by C. H. Johnson (Machinery) Limited, Adswold Road, Stockport; it operates on petrol and weighs 2 cwt. The illustration above shows the rammer consolidating backfill in a trench; a pointed base can be substituted for the one illustrated, enabling the rammer to be used for breaking up concrete, and similar tasks

In the illustration on the right the rammer has been converted into a light pile driver, in which form it is suitable for driving short sheet piles and so on



* Previous instalments in this series appeared in our issues of April 4 and 25, May 2, 9, 16, and 23, June 6, 13, and 20, July 4, and December 19, 1947

Protecting Ticket Clerks Against Infection

A transparent, sound-transmitting screen, has been developed for the protection of booking office staff on the French National Railways



A HEALTH survey carried out in one of the largest Paris railway stations by the Medical Service of the S.N.C.F. led to an inquiry into the risk of infection of booking office staff by travellers. In large and noisy stations clerk and traveller speak almost mouth to mouth in order to make themselves understood. It was found that during the course of one day an employee might be submitted to 400 of these close contacts; statistics actually

show that the death rate among booking office clerks is three times greater than that of all other railway employees.

To overcome the problem the "hygiaphone" was created. It is a composite partition with a transparent, vibrating membrane, stretched on a frame and entirely protected by two rigid, transparent plates, each with small holes drilled to allow sound to reach the membrane. A slight interval separates the plates to allow

vibration to take place. The hygiaphone is water- and air-tight, transparent, and transmits sound without weakening it.

The vibrating membrane can be made of cellophane, and tests showed that with a certain thickness of cellophane the weakening of sound was almost nil. This membrane has the advantage that it is highly resistant to wear and tear. Also, although cellophane absorbs a certain amount of moisture, no inconvenience is experienced in damp weather.

The protecting plates are made of Rhodoid or Plexiglass, which have the same degree of transparency. During tests it was noted that perforation of these plates tends to reduce the transparency and an attempt was made to establish the least number of perforations compatible with audibility. It was found that the perforated surface could be reduced to one-twelfth of the total surface without affecting audibility.

To facilitate cleaning, the frame is made with three slides. One in the centre holds the vibrating membrane and the other two support the protecting plates. The frame fits in the woodwork or metal work of ticket office windows and is kept in place by two catches.

CLOSING OF PRESTON BROOK PASSENGER STATION, L.M.R.—Preston Brook Station, on the Crewe-Warrington section of the West Coast main line of the London Midland Region, is being closed for passenger and parcels traffic on and from Monday, March 1.

RAILWAY NEWS SECTION

PERSONAL

Mr. J. B. Figgins, Acting General Secretary, National Union of Railwaymen and a Member of the General Council, has been elected General Secretary with a clear majority of almost 60,000 over six other candidates.

We regret to record the death on February 23, of Captain H. F. Whitworth, O.B.E., R.N.V.R., Principal Rail Transport Officer, Admiralty.

Mr. Taylor Thompson, Civil Engineer, North Eastern Region, British Railways, has been elected President of the Permanent Way Institution.

hydraulic engineering work with Sir Douglas Fox and Partners under Sir Ralph Freeman, he was appointed Engineer to the Trent Navigation Company, Statutory Authority for navigation on the River Trent and the Beeston, Nottingham, and Newark Canals. In 1936 he was appointed Engineer & General Manager responsible for the carrying activities of the company as well as navigation; in 1947 he was appointed Managing Director. Mr. Evans has been responsible for a large number of improvements and developments on the river and the associated canals. During the war he served on several technical committees set up by Government departments. He was Chairman of the East Midland Regional Canal Committee, and

the Hays Wharf Cartage group of companies. During the period 1939 to 1947 he was member or chairman of a number of railway accountants' sub-committees dealing with matters arising out of the Government Control Agreement, particularly as affecting maintenance and level of rates and charges.

Mr. S. B. Warder, M.I.Mech.E., M.I.E.E., who, as recorded in our January 30 issue, has been appointed Electrical Engineer, Southern Region, Railway Executive, was educated at Glasgow High School, and obtained his technical education at the University of London. After serving an apprenticeship with Johnson & Phillips, Limited, he gained further experi-



Mr. W. Beckett

Appointed part-time member of the Road Transport Executive



Mr. J. T. Evans

Appointed Eastern Area Waterways Manager, Docks & Inland Waterways Executive



Mr. V. Radford

Appointed Assistant Chief Financial Officer Railway Executive

Mr. W. Beckett, who, as recorded in our issue of January 30, has been appointed a part-time member of the Road Transport Executive, is 49 years of age, and entered railway service in 1912. He is an Alderman of Preston County Borough Council and has been a member of the Council for 19 years, during which time he has had experience on various committees, including Transport, and is at present Chairman of the Finance & General Purposes, the Establishments, and Parliamentary Committees. From 1940 to 1946 he served on the National Executive of the Railway Clerks Association, and is on the Parliamentary Panel of the R.C.A. Mr. Beckett was Mayor of Preston, 1946-1947, and is Deputy Mayor for 1947-1948.

Mr. J. T. Evans, O.B.E., M.Inst.C.E., M.Am.Soc.C.E., M.Inst.T., who, as recorded in our issue of January 2, has been appointed Eastern Area Waterways Manager, Docks & Inland Waterways Executive, was born in London in 1902, and studied civil and hydraulic engineering at the Universities of London and Grenoble. At London, where he was a Kitchener Scholar, he gained first-class honours in the degree of B.Sc. (Eng.) in 1923, and a year later received the Diploma of the Imperial College for post-graduate work in hydraulic engineering. In 1929, after more than four years' experience on

a member of the Central Canal Committee; he is also a member of the National Joint Council for the Inland Waterway Industry.

Mr. Victor Radford, M.Inst.T., who, as recorded in our issue of January 9, has been appointed Assistant Chief Financial Officer to the Railway Executive, was born in 1896, and joined the Midland Railway at Derby in 1911, in the office of the Chief Accountant. He entered the Royal Navy in 1915 and served until 1919, when he resumed duty with the Midland Railway. At the end of 1919 he joined the Finance Department of the Ministry of Transport as an investigator of Railway Accounts under the Control Agreement. He assisted the Ministry in the submission of views to the Railway Rates Tribunal on fixation of a Standard Revenue under the Railway Act, 1921. Mr. Radford joined the L.M.S.R. in 1928, in charge of the then newly-formed "back-checking of new works" section introduced by Lord Stamp. In 1934 he was appointed Assistant to the Chief Accountant, and has had wide experience in general and departmental accounting matters, train costing, economy of manufacture, job analysis, closing of branch lines, purchase of road transport businesses, variability of railway expenditure, and other financial matters. Since 1938 he has acted as a financial liaison officer between the railway companies and

ence with Ferguson Pailin, Limited, Manchester, and later as an engineer with the General Electric Co. Ltd., Wotton, Birmingham. In 1927 he joined the Swedish General Electric Company (later Asea Electric Limited) as an Engineer in the Export Department, and eventually succeeded to the position of Chief Engineer & Manager of that department. He joined the Southern Railway in March, 1936, as Technical Assistant to Mr. Alfred Raworth, then Electrical Engineer for New Works, and while in that position represented the railways on many Government technical committees. Mr. Warder was appointed New Works Assistant to the Chief Electrical Engineer in August, 1943, and recently visited North America to study and report on the development of diesel electric traction and the possibility of its application in this country. He was appointed Assistant to the Chief Electrical Engineer in January, 1947, and was primarily concerned with the plans for the future development and reconstruction of the electrified system.

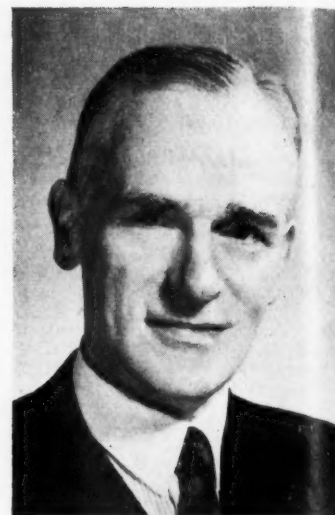
Mr. T. H. Baker, previously Assistant District Goods Manager, Leeds, L.M.S.R., who, as announced in our November 14 issue, has been appointed Assistant to the Chief Commercial Manager (Goods), Euston, London Midland Region, Railway

**Mr. S. B. Warder**

Appointed Electrical Engineer, Southern Region, Railway Executive

**Mr. T. H. Baker**

Appointed Assistant to Chief Commercial Manager (Goods), Euston, London Midland Region, Railway Executive

**Mr. H. G. Bowles**

Appointed Assistant to Chief Regional Officer, Western Region, Railway Executive

Executive, entered the service of the London & North Western Railway at Dublin in 1917. He was transferred to the General Manager's Office, Euston, L.N.W.R., in 1922, and became Personal Clerk to the General Manager, L.M.S.R., in 1925. From 1927 to 1936 Mr. Baker was a member of the staff of the L.M.S.R. Executive Committee, and in 1936 was appointed Personal Assistant to the Secretary of the company. In 1941, Mr. Baker took up the position of Outdoor Assistant, St. Pancras and Somers Town Goods Stations, London, and in 1943 was appointed Head of Merchandise Services Section, Chief Commercial Manager's Office at L.M.S.R. Headquarters. His appointment as Assistant District Goods Manager, Leeds, dates from 1946.

Mr. H. G. Bowles, who, as recorded in our issue of February 13, has been appointed Assistant to the Chief Regional Officer, Western Region, Railway Execu-

tive, entered the service of the Great Western Railway in the Goods Department at Paddington in 1913, and three years later was transferred to the Reading Goods district. After seven years general experience, including a period of training in the Traffic Department, he was in 1923 appointed to the General Manager's Office, where he had extensive experience of most of the major questions arising from the administration of the railway and its ancillary and associated undertakings, and of the several Government and other enquiries affecting transport. In 1941 he was appointed head of the General Section, which covered, among other matters, railway and docks rates and charges, rolling stock and stores, statistics and accounts, road and rail co-ordination, and business arising in connection with the associated cartage and omnibus companies. For the last two years he has been Chief Clerk to the General Manager. Mr. Bowles has been a member of the Committee of the

G.W.R. London Lecture & Debating Society since 1933.

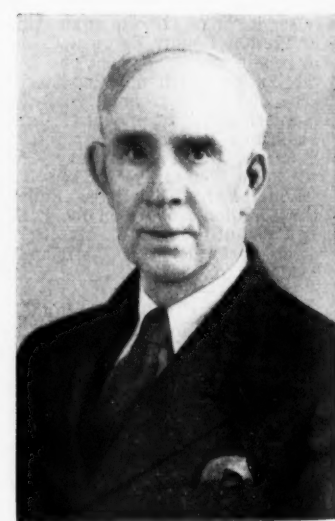
Mr. Frederick Charles Egerton, A.M.Inst.T., who, as announced in our January 23 issue, has been appointed Traffic Manager, Buenos Ayres Great Southern and Buenos Ayres Western Railways, was born in 1898; he was educated at Holt Secondary School, Liverpool, and King Edward VI Grammar School, Stafford. He joined the London & North Western Railway in 1915, and was posted to the Goods Department, Wolverhampton. In 1918 he volunteered for the Army, and served with the Royal Engineers (Railway Transport Division) until the following year, when he was demobilised, and returned to his previous post. In August, 1920, Mr. Egerton joined the Buenos Ayres Great Southern Railway, and six years later was appointed Acting District Traffic Superintendent in Las Flores, being later transferred to Neuquén in a similar

**Mr. F. C. Egerton**

Appointed Traffic Manager, Buenos Ayres Great Southern and Buenos Ayres Western Railways

**Mr. W. J. Air**

Deputy Railway Commissioner, Burma, who is on retiring leave

**The late Mr. G. A. Nokes**

A pioneer of popular railway Journalism

capacity. In 1929 he was appointed District Goods Superintendent, Buenos Aires; in 1934, Assistant to the Chief of Operation; in 1935, District Passenger Superintendent, Buenos Aires; and in 1936, Chief Staff Assistant to the Chief of Operation and the Traffic Superintendent. Mr. Egerton was promoted to be Commercial Assistant to the Traffic Superintendent in 1937, and to Assistant Commercial Superintendent in 1939; in 1947, on the retirement of Mr. T. B. Stewart in 1947, he was appointed Commercial Superintendent.

Mr. W. J. Air, O.B.E., B.Sc., Deputy Railway Commission, Burma, who, as recorded in our January 23 issue, proceeded on 2 years leave preparatory to retirement on January 4, and who is due to arrive in the United Kingdom this month, was educated at the Grove Academy, Broughty Ferry, and interrupted further studies at University College, Dundee (St. Andrew's University), to take up, in August, 1915, a commission in the Royal Garrison Artillery (S.R.). After 2½ years service in France, he returned, in 1919, to graduate as B.Sc. (Civil Engineering). Thereafter he was employed by Balfour, Beatty & Co. Ltd., on various power station and distribution construction works. In 1922 Mr. Air joined the Burma Railways as an Assistant Engineer. During his early service he was engaged on open line construction and maintenance, the re-modelling of the locomotive works at Insein and the preliminary works in connection with the building of the Ava Bridge over the Irrawaddy River near Mandalay. In 1933 he was specially selected to fill the post of Organisation Officer, to investigate and submit recommendations for the increase of efficiency and economy in respect of all departments

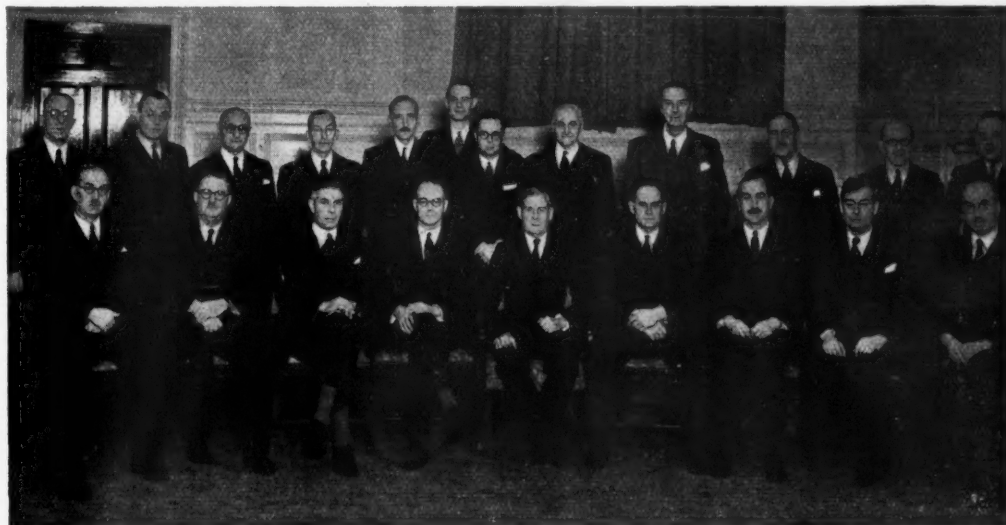
of the railway organisation. After a period as Statistical Officer, combining a watching brief on the schemes he had initiated as Organisation Officer, he was appointed, in 1939, Deputy Railway Commissioner and Secretary to the Burma Railway Board. On the evacuation of Burma in May, 1942, Mr. Air was responsible for establishing the headquarters of the Burma Railways Administration in Simla. In addition to being closely associated with the planning for the rehabilitation of the railway system, he acted as Secretary to a committee set up by the Governor of Burma to study and advise on the action to be taken to re-establish all forms of transport and communications in anticipation of the reconquest of Burma. After the re-occupation of Rangoon he returned to Burma under the aegis of the Civil Affairs Service (Burma), Railway Unit. During the temporary absence from Burma of Brigadier J. C. B. Wakeford early in 1946, Mr. Air acted as Chief Railway Commissioner. He was made an O.B.E. in the recent New Year Honours.

We regret to record the death on February 19 of Mr. George Augustus Nokes, who was widely known under his pen name of G. A. Sekon. He was a pioneer of popular railway journalism, a matter to which we make editorial reference elsewhere in this issue. Mr. Nokes was born on January 5, 1867, and was thus 81 years of age. After educational training at Hayes Grammar School and Hayes College, he was articled to a surveyor and land agent in 1885, and, at the expiration of his articles became a partner in the firm. He took up railway journalism from the popular viewpoint and became a regular contributor to the *Railway Herald*. Some of the proprietors of

that journal were associated with the formation of *The Railway Magazine* in July, 1897, and the "Railway Year Book," and they invited Mr. Nokes to become the first editor. This office he held with considerable success until a difference with the proprietors caused him to sever his connection early in 1910. He then founded another periodical entitled *The Railway & Travel Monthly*, the first number of which was published in May, 1910. At the end of the First World War, both *The Railway Magazine* and *The Railway & Travel Monthly* came under the control of the proprietors of *The Railway Gazette*. In April, 1920, *The Railway & Travel Monthly* adopted the new title of *Transport & Travel Monthly*, but it was merged in *The Railway Magazine* in January, 1923. Mr. Nokes continued for a year or two more as consulting editor, and then retired. Since then he has been a contributor. Apart from a great many articles on railway subjects contributed to newspapers and magazines over a period of more than fifty years, Mr. Nokes has written pamphlet histories of the South Eastern Railway (1895) and the London & South Western Railway (1896). His full-size volumes comprise a "History of the Great Western Railway" (1895); "The Evolution of the Steam Locomotive" (1899); "A Dictionary of Railway Words and Phrases" (1901), and "Locomotion in Victorian London" (1937).

We regret to record the sudden death of Mr. W. H. Telfer, Operating Assistant to Mr. Gerald Leedam, Secretary & Manager of the Cheshire Lines Committee, now part of the London Midland Region of the Railway Executive. Mr. Telfer went to the Cheshire Lines from the Divisional Superintendent's Office at Derby in 1941.

Sir Cyril Hurcomb's Visit to the North Eastern Region



A Group including Sir Cyril Hurcomb; Chairman, British Transport Commission, Mr. J. H. Brebner, Chief Public Relations & Publicity Officer to the Commission, Mr. V. M. Barrington-Ward, Member, Railway Executive, during their recent visit to the North Eastern Region, with Mr. C. P. Hopkins, Chief Regional Officer, and other officers of the region

Back row (left to right).—Messrs. C. Cooper, Regional Staff Officer; G. Tunbridge, Estate Surveyor; F. H. Sedgwick, Accountant; W. Mackenzie, Chief Engineer for Docks; H. S. Cole, Chief of Police; J. H. Fraser, Signal & Telecommunications Engineer; J. E. M. Roberts, Passenger Manager; J. L. Meadowcroft, Hotels Superintendent; C. M. Stedman, Locomotive Running Superintendent; R. A. Smeddle, Mechanical Engineer; E. Coleby, Solicitor; George Dow, Press Relations Officer
Front row (left to right).—Messrs. J. Taylor Thompson, Civil Engineer; A. H. Peppercorn, Chief Mechanical Engineer; V. M. Barrington-Ward; C. P. Hopkins; Sir Cyril Hurcomb; Messrs. Paul Gibb, Goods Manager; S. A. Finnis, Assistant Chief Regional Officer; J. H. Brebner; E. M. Rutter, Superintendents

Locomotive Exports from W. G. Bagnall Limited



Locomotives for the Gaekwar's Baroda State Railways leaving the works

Three of the four locomotives built by W. G. Bagnall Limited, of Stafford, to the order of the Gaekwar's Baroda State Railways were despatched from Castle Engine Works recently. The locomotives are of the "A" class, 4-6-0 type, with cylinders 15½ in. dia. by 22 in. stroke and 4-ft. dia. coupled wheels. The six-wheel tenders have a water capacity of 2,400 gal.; the locomotives are for the metre gauge. Locomotives despatched from the Bagnall works are normally either totally dismantled or shipped complete. On this occasion, on account of the limited lifting facilities available at the port of disembarkation,

Port Okha, the locomotives had to be dismantled partly before despatch. In one of the illustrations reproduced on this page, the shunting engine in the foreground is one of a batch of 25 built by W. G. Bagnall Limited for the L.M.S.R. in 1927.

The Minister of Supply, Mr. G. R. Strauss, visited the Castle Engine Works on February 15 during a tour of Midlands factories. He was received by the Managing Director, Mr. I. A. Marriott and other officials of the company, and met the Mayor of Stafford, Mrs Ruth Turney, C.C., J.P., and Captain Stephen Swingle, M.P. for Stafford. After meeting the fore-

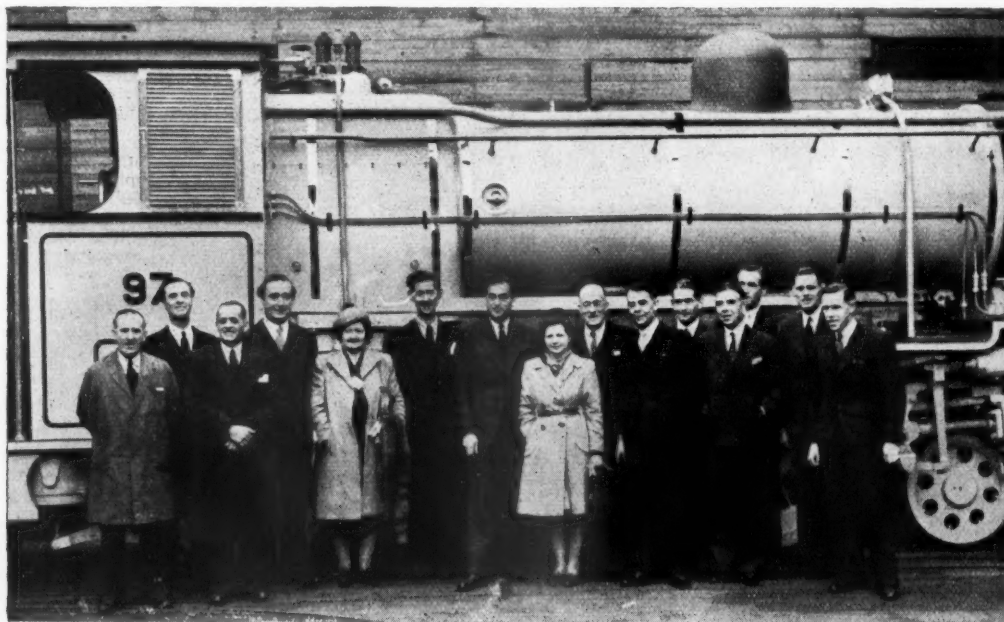
men and shop stewards, the Minister made a tour of the factory where he saw a number of locomotives in various stages of construction, all of which were destined for export.

Addressing all the workpeople at the conclusion of the tour, the Minister said he was particularly pleased when it was suggested that he should come to those works, not because they were the most modern in the country but because they were doing a remarkably fine job. They were not only making engines but were helping to buy food.

The company of W. G. Bagnall Limited, which was founded in 1875, built its first locomotive the same year. Since then it has produced some 3,000 locomotives of all types and sizes up to 100 tons in weight, apart from innumerable railway wagons, railway turntables, and other railway equipment. Shortly before the end of last year, the company was acquired by Heenan & Froude Limited, of Worcester, through which it now is associated with The Brush Electrical Engineering Co Ltd, and Associated British Engineering Limited.

There are locomotives, designed and built by Bagnall, now operating in practically every country in the world. Among the countries to which Bagnall locomotives have been sent recently are Turkey, Palestine, Tanganyika, India and South Africa.

Present output is one locomotive a week in addition to a large volume of spare boilers and other spare parts; 90 per cent. of this production is exported. Provided that this rate, which is approximately double that ever achieved before, is maintained, present orders will take two years to complete. In addition to this, an order, valued at approximately half a million pounds, has been received recently from the Western Region of British Railways for 50 shunting locomotives.



Group in front of one of the Bagnall 4-6-0 locomotives for India. Left to right: Messrs. E. Bridges, foreman of erecting shop; I. A. Marriott, Managing Director, W. G. Bagnall Limited; T. Stockton, Works Manager; Mr. Williams-Thompson, Chief Information Officer, Ministry of Supply; Mrs. Ruth Turney, Mayor of Stafford; Captain Stephen Swingle, M.P. for Stafford; the Minister of Supply, Mr. G. R. Strauss; Miss Nadya Turney, Mayoress of Stafford; Messrs. S. A. Davis, Regional Controller, Ministry of Supply, Midland Region; L. B. Hutchinson, Under Secretary (General), Ministry of Supply; J. M. Wilson, Private Secretary to Minister; F. C. Limbrey, Deputy Regional Controller, Midland Region; Mervyn Talbot, Public Relations Officer, W. G. Bagnall Limited; H. Davies, General Manager; and F. H. Wood, Chief Draughtsman

The English Electric Co. Ltd.

The ordinary general meeting of The English Electric Co. Ltd. was held in London recently, Sir George H. Nelson, Chairman & Managing Director, presiding.

The Chairman, in moving the adoption of the report and accounts, said that their general reserve had been built up over a number of years to strengthen their balance sheet generally, and to be available to meet abnormal events. Owing, however, to the interruption of production during the year due to the coal shortage, they incurred a loss estimated at over £100,000, which had been charged against profits. They had, therefore, been unable to make any allocation to general reserve, which remained at the very substantial figure of £1,200,000 as in the 1946 accounts.

After crediting dividends from Marconis and Napiers and after providing for taxation for the year, interest on their debenture stock, directors' and trustees' fees and depreciation at £245,135, against £110,000 in 1946, and after meeting all losses attributable to the fuel crisis, the balance of the profit and loss account was £491,362.

Provision having been made in the accounts for all foreseeable contingencies, the board felt justified in recommending that a final dividend of 6 per cent., making 10 per cent. for the year, should be paid on the ordinary stock of the company.

With the disastrous stoppage through the coal shortage and the delay in completing the necessary changes from the production of war materials to the requirements of peace, the year under review had been a very difficult one for the company's managers, but they would be glad to know that they finished 1947 with an order book still greater in volume, but for delivery over several years ahead without the load on any one year being beyond the capacity of their manufacturing facilities. They felt that this business came in no way by accident, but from the hard work of their engineers at home and abroad, reinforced by the reputation that they had earned for forward thinking in research, for the excellence of their designs, for the high quality of their products, for the reliance that could be placed on their company to fulfil its obligations, and for the loyal co-operation from their employees of all grades.

It was not his practice to mention any particular contract which they received, but in view of the British Government Mission which had left recently for Brazil, it might interest the stockholders to know that they had on hand an extremely important electrification for the old British San Paulo Railway, now taken over by the Brazilian Government and called Estrada de Ferro Santos a Jundiai. Stockholders might like to know that the locomotives being supplied would be the most powerful locomotives yet made in this country.

Practically 50 per cent. of their orders were on the Prime Minister's List, and the rest were mostly for overseas. In spite of the high priority of electrical plant for the home market, their export orders formed a far higher proportion of the whole than in the years before the war, when prices were so unremunerative that they risked a great deal in accepting them.

They had completed the extension of their important research laboratories at Stafford, and thus were enabled to carry research into fields of greater power and higher voltages for generating, transforming, and switchgear equipment. Their layout was not inferior to that of any similar laboratories in the world. A further important section was added to

their research laboratories to deal with the problems of atomic and nuclear energy and the application of the results of such research to the benefit of man. This, of course, could not bring immediate results, but was long-term research with which this company must be concerned. They had been fortunate in being able to bring together an expert staff and had themselves made the main equipment to carry on this work.

On December 18 last, the first main line diesel-electric locomotive to run in this country was put into operation on the former L.M.S.R. The decision to build this locomotive was made as recently as April, 1947; the diesel engine and electrical equipment were designed by their experts and built in their works and the design and manufacture of the mechanical parts were undertaken by the railway company. The whole was completed, from drawing board to operation, in seven months, and the engine had been tried already on the main-line trains from Derby to London, and London to Manchester, and had proved to have excellent riding powers, had fitted reliably into the schedules, and had reached speeds of over 85 m.p.h.

The report and accounts were adopted unanimously.

Retired Railway Officers' Society

A record number of members attended the 47th annual general meeting of the Retired Railway Officers' Society at the Great Eastern Hotel, Liverpool Street Station, on February 10, when the report and accounts for 1947 were submitted and adopted. The report recorded that the social activities of the Society again had to be curtailed because of prevailing national conditions, but ten meetings of members were held during the year, with an average attendance of 31 members. The Spring luncheon was held on March 11 and was attended by 80 members and their guests; the President occupied the chair, and the chief guest was the Rt. Hon. Alfred Barnes, Minister of Transport. This luncheon was among the most successful of the many similar functions held in the past. In view of austerity conditions it was decided to abandon the Autumn luncheon, but a Ladies' afternoon was held on January 12, and proved a great success.

The annual Summer outing also was revived, and took place on June 24, when members and their ladies, numbering 56, journeyed to Windsor by motor coaches via Heathrow Airport, and, after luncheon at Windsor, a river trip was taken. The outing proved to be a very interesting and enjoyable occasion in perfect summer weather. Several short talks of an interesting and informative character were given at ordinary meetings during the year, and offers of similar talks during 1948 would be welcomed by the Honorary Secretary.

Major-General G. S. Szlumper, in the unavoidable absence of the President, took the chair at the annual meeting, and proposed that Mr. Ernest Wharton should be re-elected as President for a second term of office. This was seconded by Mr. H. R. Campfield and carried with acclamation. The Honorary Treasurer, Mr. J. W. Lovejoy, and the Honorary Auditors, Lt.-Colonel Wilson and Mr. A. E. Moore, were re-elected. The Honorary Secretary, Major Mills, who had intimated that he wished to retire, having held office for 10 years,

agreed to carry on until a successor had been found. Votes of thanks were accorded the President and the officers for their valued services during the past year.

The Society continues to grow satisfactorily, and 18 new members were elected during the year. Among members recently elected are Sir James Milne, Sir Charles Newton, Mr. Jenkin Jones, and Sir Leonard Wilson; total membership now is 143. The financial position also is satisfactory, the accounts showing a credit balance of £132 16s. 0d.

B. & C.D. Shareholders Protest at Sale Terms

A meeting of shareholders in the Belfast & County Down Railway Company, held to protest against the sale of the company's assets to the Northern Ireland Road Transport Board for £485,989 (see our January 23 issue) decided to inform all the Ulster members of Parliament of their displeasure at the low figure, which was considered to be "much less" than the actual value of the undertaking.

A resolution was passed demanding that legal opinion be obtained as to the stockholders' rights in the sale of the assets; as to the right of the Board of Directors to sell; and the position with regard to the liquidation of the company; but the meeting was adjourned to see what attitude was taken to the sale at the forthcoming annual meeting of the company.

Mr. F. R. M'Master, who presided, said that perhaps the stockholders would consider the possibility of proposing that a Bill be introduced in Parliament abrogating the section of the Act which insisted that the Belfast & County Down Railway must carry on all branches of the undertaking, whether economically or otherwise; and that a liquidator be empowered to sell the assets of the railway. After that the Government, if it wanted to buy any portion of it, would do so at auction. In his opinion the assets were worth £1,250,000.

Railway Wage Claims

Discussions began in London on February 23 between officers of the Railway Executive and representatives of the National Union of Railwaymen, the Associated Society of Locomotive Engineers & Firemen, and the Railway Clerks' Association, regarding outstanding wage claims affecting 600,000 employees of British Railways.

A claim last year for increases up to £1 a week was referred to a court of inquiry, which recommended an increase of 7s. 6d. for adult grades and urged extensive consideration of existing scales and categories in the railway service. In December the companies undertook to consider in detail proposals for the conciliation grades put forward by the union. These negotiations are now being continued by the Railway Executive. The general secretaries of the three unions concerned are members of the General Council of the T.U.C., which has endorsed, with emphasis on certain safeguards, the Government's wage-pegging policy.

A wage claim between London Transport bus, tram, and trolleybus workers is under discussion between officials of the Executive and the Transport & General Workers' Union. A wage increase offer was made by the Executive on February 24 and was considered by a delegate conference. A further meeting takes place this afternoon.

Parliamentary Notes

Holiday Transport

Mr. P. L. E. Shurmer (Birmingham, Sparkbrook—Lab.) on the motion for the adjournment of the House of Commons on February 10 raised the question of the abolition of the basic petrol ration and asked whether the alternative plans put forward by the motoring organisations had been fully considered. He asked the Minister for an early announcement about a return of the basic petrol ration. Unless there was an early statement from the Government many people would be left in doubt about their holidays. Holidays with pay were now in operation on a large scale, and 33,000,000 men, women and children were entitled to a holiday. The railways could not cope with that position. It was estimated that last summer, when 2,003,000 motorists were on the road, the railways were relieved of the necessity to provide transport facilities in respect of some six or seven million people.

Mr. A. Robens (Parliamentary Secretary to the Ministry of Fuel & Power) said that when the Minister received the report of the special committee he had set up to investigate the problem of the black market, he would be able to examine the situation and arrive at some definite conclusion. As soon as it was possible to provide basic petrol the Minister would provide it. The situation was gloomy, to say the least, and there was no possibility at all of basic petrol for Easter.

The Government wished to ensure that the workers in industry and elsewhere should have reasonable and comfortable travelling facilities. In an endeavour to improve the situation concerning travel by rail, the Minister was increasing the amount of coal to be allocated to the railways this summer by 250,000 tons. That was as far as his department could go. They were not responsible for the transport facilities that could be made available as a result of that increased allocation. He had no doubt the Minister of Transport would give the House quite soon some indication as to what effect that extra coal allocation would have in improving transport by rail.

Questions in Parliament

Oil-Burning Locomotives

Mr. J. A. Sparks (Acton—Lab.) on February 9 asked the Minister of Transport how many locomotives had been converted to oil burning so far on each of the former systems of the G.W.R., L.M.S.R., L.N.E.R. and Southern Railway; and to what extent it was proposed that oil burning should supersede coal-burning locomotives in future policy.

Mr. Alfred Barnes (Minister of Transport) stated in a written answer: 37, 24, 1, and 31, respectively. Future policy is under consideration.

Socialised Undertakings

The Prime Minister (Mr. C. R. Attlee) has published a list of members of the central and area boards of a commercial character, with the salaries and allowances determined by the responsible Minister, in response to a request by Mr. F. J. Erroll (Altrincham & Sale—C.) for a comprehensive list of all members appointed to central and area nationalised boards of a commercial character, together with details of individual salaries.

The list is given in part hereafter:—

Office	Name	Salary	Allowance
British Overseas Airways Corporation			
Chairman	Sir Harold Hartley	£7,500	£1,000* expenses allowance
Deputy Chairman	Sir Miles Thomas	£3,500	
Managing Director (Chief Executive)	Mr. Whitney Straight	†	
Managing Director (External Affairs)	Major J. R. McCrindle	†	
Members	Major R. H. Thornton Lord Burghley Sir Clement Jones Lord Rothschild Mr. H. L. Newlands	£1,500 where undertaking executive duties, otherwise £1,000	
British European Airways Corporation			
Chairman	Mr. G. D'Erlanger	£6,500	£1,000* expenses allowance
Deputy Chairman	Mr. J. H. Keeling	£1,500	
Managing Director	Mr. J. V. Wood	†	
Members	Alderman I. J. Hayward Wing-Commander A. H. Measures Sir Patrick Doilan Mr. W. A. Edmenson	£1,500 all on executive duties	
British South American Airways Corporation			
Chairman	Mr. J. W. Booth	£6,000	£500* expenses allowance
Deputy Chairman	Sir John Stephenson	£1,500	
Members	Mr. G. MCT. Sheppard Lord Kershaw Sir Francis Brake	£750	
Board of Cable & Wireless Limited			
Chairman	Sir Stanley Angwin	£2,500	£350
Managing Director	Mr. J. Innes	£5,000	£350
Director (full-time)	Major-General L. B. Nicholls	£1,750	
Directors (part-time)	Mr. C. N. Gallie Mr. A. Black	£750	
National Coal Board			
Chairman	Viscount Hyndley	£8,500	£10,000 to be allocated among members of the Board
Deputy Chairman	Sir A. W. Street	£5,000 (personal)	
Members (full-time)	Mr. L. H. Lowe Sir Charles C. Reed Sir Charles Ellis Mr. J. C. Gridley Mr. E. E. Edwards Mr. T. E. B. Young Sir Joseph Hallsworth	£5,000	
Colonial Development Corporation			
Chairman	Rt. Hon. Lord Trefgarne	£5,000	
Deputy Chairman	Sir Frank Stockdale	£3,000	
Members (part-time)	Mr. E. C. Tansley Sir Miles Thomas Mr. H. M. Hume Mr. H. M. Gibson Mr. R. E. Brook Mr. J. Rosa Sir Charles Darwin	£500 Unpaid	Under consideration
Cotton Board			
Chairman	Sir R. Street	£4,500	£500
Members (part-time)	Mr. W. Higgin Mr. J. D. Greenwood Mr. M. Fletcher (Jnr.) Mr. P. S. Rendall Mr. A. V. Symons Mr. A. Nasmith Mr. A. Knowles Mr. P. H. Bagnall	Unpaid	
Raw Cotton Commission			
Chairman	Mr. H. O. R. Hindley	£5,000	£500
Members (full-time)	Mr. J. T. Porritt	£3,000	£500
Members (part-time)	Mr. A. J. Byrne Mr. J. Etherington Mr. W. A. M. Hesketh Mr. R. W. Lacey Mr. A. Roberts Mr. C. Schofield Mr. A. V. Symons	£500	
British Electricity Authority			
Chairman	Rt. Hon. Lord Citrine	£8,500	
Two Vice-Chairmen	Sir Henry Self Mr. J. Hacking	£5,000	
Member (full-time)	Mr. E. W. Bussey	£3,500	
Members (part-time)	Dame Caroline Haslett Ald Sir W. Walker Lt.-Colonel E. H. E. Woodward Rt. Hon. T. Johnston Mr. H. J. Randall Mr. J. S. Pickles Ald W. S. Lewis Mr. J. Eccles	£1,000 Unpaid Salaries as Chairmen of Area Boards—see below	£2,500 to be allocated among Members of the Board

* These sums are exclusive of (a) overseas visits, (b) special large scale entertainments, (c) car and chauffeur. They are inclusive of travelling and subsistence expenses in this country. Travelling and subsistence expenses in this country of other Members are reimbursed.

† Remuneration for full-time executive appointment has been determined by the Corporation.

Office	Name	Salary	Allowance	
Electricity Area Boards				
Chairmen	Full-time	£4,000	} Not more than £1,500 for each Board	
Deputy Chairmen	Full-time	£3,500		
Members	Part-time	£750		
North of Scotland Hydro-Electric Board				
Chairman (part-time)	Rt. Hon. Tom Johnston	Unpaid	£200	
Deputy Chairman	Mr. A. E. MacColl	£3,000		
Members (part-time)	Mr. Neil Beaton	£500		
	Sir Hugh Mackenzie			
	Mr. W. K. Wigham	Unpaid		
Overseas Food Corporation				
Chairman	Mr. L. A. Plummer	£5,000	£2,000 to be Allocated among Members of the Board	
Vice-Chairman	Mr. J. McFadyen	£4,000		
General Manager	Major-General D. Harrison	£4,000		
Members (full-time)	Sir Charles Lockhart	£3,000		
	Mr. A. J. Wakefield			
Members (part-time)	Mr. J. Rosa		£500	
	Mr. F. Samuel			
	Lord Rothschild			
	Sir Frank Stockdale	Unpaid		
Steel Board				
Chairman	Sir Archibald Forbes	£8,500	£5,000 to be allocated among Members of the Board	
Members (part-time)	Sir Alan Barlow, Bt.	Unpaid		
	Sir Wilfred Ayre			
	Mr. A. Callingham	£1,000		
	Mr. Lincoln Evans			
	Mr. R. Mather			
	Mr. C. H. Latham	Unpaid		
British Transport Commission				
Chairman	Sir Cyril Hurcomb, G.C.B., K.B.E.	£8,500 of which £7,000 only is drawn	£4,000 to be allo- cated among mem- bers of the Commission	
Members (whole-time)	Rt. Hon. Lord Ashfield	£5,000		
	Mr. John Banstead			
	Lord Rushmore			
	Sir William Wood	£1,000		
(part-time)	Captain Sir Ian Bolton, Bart.			
Railway Executive				
Chairman	Sir Eustace Missenden	£7,000	Under consideration	
Members (whole-time)	General Sir William Slim	£5,000		
	Mr. W. P. Allen			
	Mr. V. M. Barrington-Ward			
	Mr. D. Bee			
	Mr. R. A. Riddles			
	Mr. J. C. L. Train			
	In one case in which an officer of an existing undertaking was in receipt of a higher salary, he will continue to receive the higher amount.			
	Mr. C. Neville			£750
Sir Wilfred Ayre				
(part-time)				
London Transport Executive				
Chairman	Rt. Hon. Lord Latham	£5,000	Under consideration	
Members (whole-time)	Mr. John Cliff	£3,500		
	Mr. A. H. Grainger			
	Mr. L. C. Hawkins			
	Mr. A. B. B. Valentine			
	In three cases in which officers of London Passenger Transport Board were in receipt of higher salaries they will continue to receive the higher amount.			
(part-time)	Sir Richard Burbidge, Bt.	£750		
	Sir Edward Hardy			
	Mr. T. E. Williams			
Road Transport Executive				
Chairman	Major-General G. N. Russell	£5,000	Under consideration	
Members (full-time)	Mr. C. aud Barrington	£3,500		
	Mr. George Cardwell			
	Mr. Harold E. Cay			
	Mr. Archibald Handerson			
	Mr. W. Beckitt			
(part-time)	Mr. Henry Duffield	£750		
	Mr. Percy J. R. Tapp			
Dock and Inland Waterways Executive				
Chairman	Sir R. H. Hill	£5,000	Under consideration	
Members (whole-time)	Sir R. Letch	£3,500		
	Mr. J. Donovan			
	Mr. R. Davidson			
	Mr. G. Cadbury			
	Sir H. Murrant			
(part-time)	Sir H. Macneil	£750		
Hotels Executive				
Chairman	Rt. Hon. Lord Inman	£5,000 (personal)		Under consideration

Service Charge in Restaurant Cars

Mr. Edward Evans (Lowestoft—Lab.) on January 26 asked the Minister of Transport how the service charge in respect of meals served in railway restaurant cars was allocated; whether that charge was designed to take the place of gratuities; and to what extent the staff benefited under that arrangement.

Mr. Alfred Barnes in a written answer stated: This is a matter for the British Transport Commission, and I am therefore drawing its attention to Mr. Evans' question.

Mails at Railway Stations

Mr. F. Lee (Manchester, Hulme—Lab.) on January 28 asked the Postmaster-General whether he would make provision for Government mail to be adequately safeguarded on railway stations.

Mr. Wilfrid Paling (Postmaster-General) stated in a written answer: The safeguarding of mails on railway stations is under constant review, and all practicable steps are taken to ensure that the arrangements are adequate. If, however, Mr. Lee has in mind any particular station where he thinks existing safeguards might be improved, I shall be happy to look into the matter.

Doncaster Works Extension

Mr. Evelyn Walkden (Doncaster—Ind. Lab.) on January 20 asked the Minister of Transport if he had now reviewed the urgent demands for steel to enable the contractors to complete the erection of two new extensions to the L.N.E.R. works at Doncaster; whether he was aware that the failure to deliver 700 tons of steel would seriously affect the problem of wagon shortages and the new wagon-building programme; and if he would issue instructions for sufficient steel to be allocated to complete the works by the specified contract date.

Mr. Alfred Barnes (Minister of Transport) in a written answer stated: The highest priority was given for the steel required and the Iron & Steel Federation is taking active steps to find suppliers for items which are still outstanding.

Traffic on Canals and Inland Waterways

Mr. J. A. Sparks (Acton—Lab.) on February 11 asked the Minister of Transport if he would state the tonnage of traffic conveyed by canals and inland waterways, excluding the Manchester Ship Canal, in 1938 and at the nearest convenient comparative period; and if possible give the information separately for the canals owned by each of the former railway companies.

Mr. Alfred Barnes, in a written answer, stated: The following table shows the tonnage originating, in 1938 and 1946, on the canals and inland waterways in respect of which periodical returns are made to my department. It would be misleading to aggregate figures of tonnage conveyed, but I am sending to Mr. Sparks a lengthy table showing figures for the individual waterways.

Year	Railway-owned canals	Other than railway-owned	Total
1938 ...	1,112,776	11,839,670	12,951,746
1946 ...	516,522	9,881,326	10,397,848

In these totals the tonnage of traffic conveyed over more than one canal or waterway has been counted once only and the figures therefore represent the tonnage originating on all the canals and waterways. The figures for railway-owned canals in 1938 cannot be divided among the four railway groups.

Notes and News

Road Transport Executive.—The address of the Road Transport Executive is now St. Pancras Chambers, Euston Road, London, N.W.1 (Telephone: Terminus 7151).

Civil Engineering Assistants Required.—Two civil engineering assistants are required by the Tyne Improvement Commission, preferably, though not necessarily, with dock and harbour experience. See Official Notices on page 263.

Collision Near Lille, French National Railways.—A workmen's train collided with a goods train as it was leaving Thumeries Station, about 13 miles from Lille, on February 17. The first two coaches of the workmen's train were wrecked, and 24 passengers were killed; 50 more persons were taken to hospital.

Southern Railway Company.—A general meeting of the proprietors of the Southern Railway Company on the register immediately before January 1 will be held at Wigmore Hall, London, W.1, on Thursday, March 4, to receive the report of the directors and to consider a resolution approving the payment of £60,000 to the directors as compensation for loss of office. See Official Notices, page 263.

Uruguay Railway Purchase Talks.—Reuters reports that authoritative quarters in Montevideo confirmed on February 19 that negotiations for the purchase of the British-owned railways in Uruguay were making satisfactory progress, and that the outcome was not in doubt. It was added that the question of the British staff of the railways was under discussion. Although the purchase price has not been disclosed, it is not expected that there will be any difficulty in reaching agreement on this question.

The Industrial Revolution in Art.—An exhibition entitled "The Industrial Revolution in Art, 1760-1851," has been arranged by Dr. F. D. Klingender, in collaboration with the Newcomen Society, and is to be opened at Heal's Mansard Gallery, 196, Tottenham Court Road, W.1, on Tuesday, March 2, at 3 p.m., by Dr. H. Shaw, Director of the Science Museum. The exhibition, which will consist of paintings, prints, and models, is designed to show the influence of the industrial revolution on the art of the period. It is interesting to note that the exhibition will be held near the site of the circular track where Richard Trevithick demonstrated his steam locomotive 140 years ago.

London Transport "C" Stock Dividend.—London Transport announces that, after giving effect to the provisions of Section 20 of the Transport Act, 1947, the balance of net revenue available for distribution in respect of the year 1947 is £4,719,530, compared with £4,695,825 in the previous year. Interest on the prior charge stocks requires £3,902,291, leaving £817,239 for the service of the "C" stock. An interim payment on the "C" stock of 1½ per cent. actual was made on August 22, 1947. The final payment of interest on the "C" stock for the year 1947 will be at the rate of 1.930066 per cent. (approximately 1½ 18s. 7d. per cent.), making, with the interim payment of 1½ per cent., a total of 3.180066 per cent. actual for the year (approximately £3 3s. 7d. per cent.), compared with 3 per cent. for the previous year. Payment will be made by the board's registrars, the Bank of England, on March 23, 1948, to

all holders of London Transport "C" stock registered in the books of the Bank of England at the close of business on December 31, 1947, at the rate of 1.930066 per cent., less income tax at 9s. in the £. The board also announces that it will transmit shortly to the Minister of Transport the report and statement of accounts and the auditors' report for the year ended December 31, 1947. Copies of the annual report and statement of accounts will be on sale at the price of 1s. at the offices of the board, 55, Broadway, Westminster, S.W.1, on and after March 24, 1948.

Railways Athletic Association Fixtures.—The activities of the Railways Athletic Association, which were suspended during the war, are now being resumed. Forthcoming fixtures include a North v. South of England football match at Doncaster at 3 p.m. on March 6; a 5-mile cross country championship of the British Railways at Ruislip at 3 p.m. on March 20, in which a French Railwaymen's Sports Union team is to compete; and an association football match, British Railways v. French Railwaymen's Sports Union, on Millwall F.C. ground, New Cross, at 3.15 p.m. on March 29.

New Narrow-Gauge Railway in Jugoslavia.—A railway with a gauge of 1 ft. 11½ in. has been completed in recent months in that part of South West Jugoslavia which borders on North East Albania, and is known as Kosmet. The railway is about 13½ miles long, and connects Kacanik, on the Skopje-Kraljevo main line, with Vrbestica, in the mountain region to the west. The line was opened to traffic last summer, but according to a notice recently published by the Yugoslav State Railways, no services are operated in winter. In summer, a service of one passenger train a day each way was operated, taking 2 hr. 52 min. westbound and 2 hr. 17 min. eastbound.

Leopoldina Take-Over Proposals Report.—According to reports quoted by Reuters, the Brazilian Government is considering taking over the Leopoldina Railway. Although the Finance and Transport Ministries refused to comment on the report, a spokesman confirmed that a meeting of the Ministers of Finance, Transport, and Labour had considered the position of the railway. He added the results of the meeting were being studied by the Finance Minister. A British Embassy spokesman stated the British financial mission in Rio de Janeiro had nothing to say on the subject. The three Brazilian Ministers met on February 19 on the instructions of President Dutra, after alleged complaints of deficient service on the railway. The complaints, it was said, came from the Sugar & Coffee Producers' Association, who claimed that defects in Leopoldina services were increasing costs of their products.

New French Cargo Steamer for Newhaven-Dieppe Service.—The ms. *Rennes*, a new 900-ton French cargo vessel built for the Newhaven-Dieppe service, arrived at Newhaven on February 18 on a trial trip. On board was a party of French railway officials, who were received at Newhaven by representatives of the Southern Region, including Mr. H. J. Bourne, Assistant Continental Superintendent, Mr. K. R. Ellison, Public Relations Assistant, and Mr. R. J. Cardy, Divisional Marine Manager, Newhaven. When the ship ultimately goes into service, she will have space for 70 to 80 cars. The *Rennes* replaces a cargo steamer of the same name which was sunk at Dunkirk. She is the

sister ship of the ms. *Nantes*, which came into the Newhaven-Dieppe service in June, 1947. Among those who crossed in the *Rennes* from France were M. Tison, of the French Merchant Navy; M. Blot, Administrateur de l'Inscription Maritime; M. Lenail, Inspecteur de la Navigation; Monsieur Lair, Ingénieur de la Marine; and M. Le Guelass, of the Bureau Veritas.

Montreal Office for British Railways.—A Canadian office will be opened in Toronto on March 1 on behalf of British Railways. The office, situated in the Canadian Pacific Railway building at Toronto, will be equipped to issue tickets and make reservations for all railway services operated in Great Britain, and for the services to the Continent and Ireland.

Southern Region Cup Tie Excursion to Southampton.—The first football excursion on the Southern Region since 1939 will be run from London to Southampton tomorrow for the Southampton v. Tottenham Hotspur cup tie match. The third class return will be 16s. 2d., and the timings as follow: depart Waterloo, 10.15 a.m.; arrive Southampton Central, 12.10 p.m.; and depart Southampton Central, 6.30 p.m.; arrive Waterloo, 8.24 p.m.

Western Region Race Specials.—The first race excursions from London to be arranged by the Western Region since the ban was lifted will run from Paddington to Cheltenham Racecourse Station on March 2, 3 & 4 for the National Hunt Meeting. One train will run in each direction on March 2 and 3, and two trains on March 4. First and third class day bookings by these trains, from Paddington and suburban stations, will be at single fare for the return journey.

Swiss Local Railways to Amalgamate.—The Appenzell Railway, which owns and works the 21-mile metre-gauge electric railway connecting Appenzell, via Urnäsch and Herisau, with Gossau (on the Zürich—St. Gall main line) is to be amalgamated with the Appenzell-Wasserauen Railway, owning and working the 4.3-mile metre-gauge electric line linking Appenzell, via Weissbad, to Wasserauen. The amalgamation is to take place in the near future, and will be made effective from January 1 this year.

Associated Equipment Co. Ltd.—The report and accounts for the year ended September 30, 1947, show a final profit for the year of £864,000, as compared with £950,000 in 1945-46. Out of this sum £626,500 is deducted as provision for taxation, and allocations are made of £20,000 to employees' benefit reserve and £30,000 to general reserve, leaving a balance of £187,500. The dividends proposed on the ordinary stock are an interim dividend of 1s. per £1 unit, and a final dividend of 1s. 6d. per £1 unit, both free of tax. The total fixed assets are £2,483,000, as against £2,266,000, and current assets are £5,466,870, comparing with £4,087,787. The total assets, less liabilities and provisions, amounted to £4,628,000 as against £4,205,000.

Cordoba Central Trust Limited.—The gross income for the year amounted to £12,001, and after allowing for expenses in London and Buenos Aires, and for taxation adjustment, there is a deficit of £2,983. The directors regret that it is not possible to report any material progress during the past year towards settlement of the more important claims and lawsuits instituted against the company. Reserves of £171,139 have been made in respect of these claims and lawsuits. A sum of

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OFFICIAL NOTICES

Southern Railway Company

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

Tyne Improvement Commission

CIVIL ENGINEERING ASSISTANTS

THE Tyne Improvement Commission invite applications for two Civil Engineering Assistants, preferably, though not necessarily, with Dock and Harbour experience. The salary in the case of the first of these two appointments will be £405 per annum, rising by annual increments of £15 and £20 to £440 per annum, plus war bonus, and in the case of the second will be £375 per annum, rising to £390 per annum, plus war bonus. (War bonus for both these scales of salaries is at present £65 per annum).

The successful candidates will be required to pass a medical examination and the appointments will be subject to the provisions of the Commissioners' superannuation scheme.

Applications stating age, education, training and experience, together with copies of testimonials, should be addressed so as to reach the undersigned not later than April 1, 1948.

J. K. MCKENDRICK,
Secretary

Bewick Street,
Newcastle-upon-Tyne, 1.
February 17, 1948.

INTERNATIONAL RAILWAY ASSOCIATIONS. Notes on the work of the various associations concerned with international traffic, principally on the European Continent. 2s. By post 2s. 2d.

£160,000 in 1½ per cent. Exchequer Bonds, 1950, is lodged with the Bank of London & South America Limited in London, as collateral security for the guarantee given by the Buenos Aires branch of the bank to the Argentine Government in connection with the claim against the company by the Argentine Pension Fund authorities.

Diesel Tenders Invited for Victoria.

On February 19 the Victorian Railways Commissioners decided to invite tenders for 18 diesel-electric locomotives, 12 of which will be of 1,500 h.p. for main-line traffic, and 6 of 350 h.p. for shunting. The administration has suffered severely from restricted coal supplies from New South Wales, and is experiencing difficulties in connection with the manufacture of steam locomotives. The commissioners were advised recently that the capital cost of diesels was now on a more competitive level in comparison with that of steam locomotives. It was considered also that some diesel locomotives would be procurable in appreciably less time than steam locomotives.

London Transport Route Check.—A three-day Underground route test, the first of its kind since 1939, began on February 13. Ticket examiners were posted at 22 key exchange stations in order to collect information urgently needed for the study of London travel trends on such points as the following:—How many travellers from Morden (Northern Line) to Bow Road (District) go via Charing Cross and how many via Bank and Monument; how many travellers from Putney Bridge (District) to the West End change at Earls Court and how many at Charing Cross; how many travellers from Piccadilly Circus to the Uxbridge Line go via the Piccadilly Line and how many via Baker Street and the Metropolitan. Over 3,000,000 tickets are being sorted into scores of categories; the complete results will take approximately six months to work out.

Derailment at Wädenswil, Swiss South Eastern Railway.—A train conveying a party of skiers got out of control on a steep down gradient near Burghalden, on

the Einsiedeln to Wädenswil line, on February 22. It passed Burghalden at nearly 50 m.p.h. instead of the normal 20 m.p.h., the driver having signalled that he could not apply the brakes or reduce speed. A warning was sent to Wädenswil, where the train was diverted into a siding. It overran the buffer stops, and collided with a building, which collapsed on to the wreckage of the carriages. It is reported that 21 persons were killed and 108 injured, 60 of them seriously.

Bermuda Railway Sale.—Reuters reports that the British Guiana Government has purchased for \$414,000 (West Indian) the entire track and railway equipment of the Bermuda Government. The equipment will be used as replacement for the worn-out stock of local railways. It had been reported earlier (see our January 23 issue) that the railway had been sold to a company in Washington for future use in South America.

Metropolitan Railway Surplus Lands Co. Ltd.—A statement by Sir Bernard Docker presented at the annual general meeting of the Metropolitan Railway Surplus Lands Co. Ltd. on February 24, said that the year 1947 had seen an increase in gross rental income of nearly £19,000. Revenue during the year had been increased substantially by the receipt of interest on the war damage value payments equivalent to a gross sum of £38,857. As a result of the improvement in ordinary income, they had recommended an increase in the dividend from 2 per cent. to 2½ per cent., while the carry-forward was raised from £14,233 to £36,056 after providing for income tax and profits tax. Their annual rent roll on the basis of current lettings as at December 31, 1947, amounted to £138,127. They continued to be concerned about the effect of the Town & Country Planning Act, 1947, without yet being any better able to assess the possibilities with precision. While they struggled to understand and comply with the spate of current legislation, they had regretted the absence of the long-awaited measure to give some relief to landlords suffering from the unequalled and, in some cases, the unjust effects of statutory rent control. The long-delayed denial of justice

Waterloo Station,
London.
February 17, 1948.

RAILWAY STORE METHODS. By W. H. Jarvis. Great Western Railway. The necessity for training officers—Organisation of stores department—Stores accounts. Cloth, 7½ in. by 5 in. 116 pp. With diagrams. 4s. By post 4s. 3d.

REPRINTS.—The following interesting articles have been reprinted in pamphlet form, and are on sale at this office:—A National Transport Programme—1s. The Railway Executive Committee and Its Headquarters in Wartime—5s. The Work of the Railway Clearing House, 1842-1942—2s. 6d. L.M.S.R. Locomotive Casualty Report System—1s. Coming of Age of Railway Grouping: G.W.R., L.M.S.R., L.N.E.R., S.R.—2s. 6d. The "Paget" Locomotive—2s. British-Built Austerity 2-10-0 Locomotive—2s. The Coronation Scot—With Folding Plate—3s. Diesel Locomotives for Industrial Shunting—2s. L.M.S.R. General Utility Locomotives—1s. Station Design—1s. Sectioned Perspective View of Locomotive Front End with Folding Plate—2s. 6d. Plastics in Railway Engineering—1s. The Locomotive Carriage & Wagon Workshops of the Nigerian Railway—1s. 6d. The Tyneside Electrified Lines of the L.N.E.R.—1s. New Southern Railway Passenger Luggage Van—1s. New Montreal Central Station, Canadian National Railways—5s. White-moor Marshalling Yard, L.N.E.R.—1s. The Railway System of Jamaica—1s. The Railways of Persia—2s. British Work on Persian Railways—1s.

If sent by post 2d. extra

THE RAILWAY HANDBOOK provides the railway student with a collection of useful statistics and information relating to the railways of Great Britain and Ireland. In addition, in matters of international interest, such as speed and electrification progress, the book extends its scope to cover the whole world in order to present a complete picture of these increasingly-important developments. 120 pp. Dy. 8vo. Paper covers. Price 5s. By post 5s. 3d.

FIFTY YEARS OF RAILWAY LIFE IN ENGLAND AND SCOTLAND. By Joseph Tatlow. Cloth, 8½ in. by 7 in. 223 pp. Illustrated. 10s. By post 10s. 7d.

in this respect was likely in the long run to affect adversely the tenants of residential property generally.

Opening of Northern Transandine Railway.—The official opening took place on February 20 of the new route between Salta, in Northern Argentina, and the Chilean port of Antofagasta. The opening ceremony was held at Socompa, on the Argentina—Chile border. At one point in the Andes on its length of nearly 1,500 miles, the new route is at an altitude of some 15,000 ft. above sea level.

Central Wagon Co. Ltd.—Profit for the year ended September 30 last is shown in a preliminary statement to have been £101,032, after allowing for depreciation and taxation, comparing with £79,951 in the preceding year. A transfer of £34,000 is made to general reserve, an increase of £4,000, and as in 1945-46 a final dividend of 15 per cent. will bring the total distribution up to 20 per cent. The carry-forward of £42,420 compares with £30,388 in the previous year.

McNamara & Co. Ltd.—In his speech at the annual meeting of McNamara & Co. Ltd. in London recently, the Chairman, Sir Maxwell Hicks, said that although the company's differences of opinion with the Minister of Transport in connection with the control contract were not settled, he was prepared to say that the atmosphere looked distinctly better. They were still carrying forward a substantial sum, and were satisfied that of itself this should more than cover anything they could possibly have to meet in that connection; and they had felt justified in recommending a dividend for 1946 at the rate of 16½ per cent. Regarding the position in relation to the Transport Commission, the Chairman said that quite a lot of people were exalting the position from both points of view. Until those examinations were completed they could not get down to any question of negotiation. Quite a lot had happened in detail but there was nothing that he could tell the meeting definitely at the moment. Quite frankly, 1947 had been a bad year, the company's living having been cut off for a fortnight by a transport strike.

and business having been dislocated for a prolonged period by the fuel crisis. This might not effect the ultimate position, because it might mean, without looking too far into the future, that they might cease to exist before very long.

East Kent Road Car Co. Ltd.—Addressing the annual meeting of the East Kent Road Car Co. Ltd. on December 12, 1947, the Chairman, Mr. R. P. Beddow, said that the public would be well advised to give the most careful scrutiny to any proposals made under the Transport Act for promoting co-ordination of services. As a result of the company's own recognition of the importance of co-ordination, they already had in East Kent a completely integrated service of buses, constituting a highly flexible transport system with an equally flexible local management. Moreover, a large measure of co-ordination had been secured with the Southern Railway, a standing joint committee for this purpose having been set up some 17 years ago. In view of the nationalisation of the railways, Mr. Beddow wished to express the company's thanks for the help and assistance which they had always received from those of their directors who had been associated with the Southern Railway.

Forthcoming Meetings

March 1 (Mon.).—The Institute of Transport at the Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 5.30 p.m. for 6 p.m. Visit of the President of the Institute, Mr. T. W. Royle, C.V.O., M.B.E., M.Inst.T.
March 5 (Fri.).—Stephenson Locomotive Society, 32, Russell Road, W.14, at 6.30 p.m. "Motive Power of the Future," by O. S. Nock, B.Sc. (Eng.), M.I.Mech.E.

Railway Stock Market

Business in stock markets has again declined, and, in the absence of demand, values in all sections lost further ground, although no heavy selling was reported. The Palestine and Czech news combined to make for fresh uncertainty. British funds receded, with British Transport changing hands slightly below 98½, although it is realised in the market that the latter will have to reach par by April 1 unless British Electricity stock is to be issued at a discount or made shorter-dated than British Transport Stock (1978-88).

Last and final dividend announcements of the home railways were up to best expectations, and show that as a last service to stockholders the directors have done everything possible (within the limitations of the Transport Act) to distribute up to the hilt. Consequently, for example, holders of L.N.E.R. preferred ordinary registered on December 31 last will receive a dividend of 0.81 per cent., their first payment since 0.25 per cent. for 1930, the second preference receiving its full 4 per cent., compared with 3½ per cent. for 1946.

Argentine rails have been quiet, awaiting news as to the date when Argentina will hand over the pay-out money to the companies. There was some selling on the part of speculators who bought ordinary and preference stocks just prior to the conclusion of the Anglo-Argentine trade agreement, but with prices still below pay-out levels, it is hardly surprising that selling has been on a very small scale.

There was considerable activity in Leopoldina Railway stocks, the ordinary rising to 14½, the preference to 43, while the 4 per cent. debentures were up to 65½. This followed fresh talk of "take-over" negotiations. Moreover, Leopoldina Terminal debentures were firm at 58, with

the £1 ordinary shares quoted at 38. Later, however, following news of the strike by employees demanding higher wages, there was considerable profit-taking, but fresh buyers appeared despite fears that Brazil might decide to expropriate the line, in which case negotiations for fair compensation for stockholders might prove a protracted business. Meanwhile, at the time of writing, further news is awaited from Brazil. It is pointed out that any action in regard to the Leopoldina Railway would have to be related in some measure to the financial discussions now in progress between Brazil and the U.K.

San Paulo Railway (164) eased with Leopoldina stock, news being awaited as to when the purchase money for the line will be paid over by Brazil. In other directions, Uruguay railway stocks have continued to attract a good deal of speculative attention on more talk of an official statement regarding take-over of railways.

Beira Railway bearer shares, at 48s. 9d., have declined sharply on some disappointment in the market with the unchanged dividend. United of Havana 1906 debentures changed hands around 15, while in other directions French railway sterling bonds were firmer, with Midi at 90 and Nord 104.

A point which is attracting considerable attention in the City is whether, with the Government's plans for attempting to check inflation centred on reducing profits and prices, there will be another increase in the price of coal, because this would be bound to result in a further rise in the production costs of many industries. Meanwhile the F.B.I. proposals for reducing prices and profits are expected by the middle of next month. The City is afraid that if they are not drastic enough the Budget may bring a further increase in the profits tax.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffic for week		No. of Week	Aggregate traffic to date			Shares or Stock	Prices		
				Total this year	Inc. or dec. compared with 1945/46		Totals		Increase or decrease		High-est 1947	Lowest 1947	Feb. 24 1948
							1947/8	1946/7					
South & Central America	Antofagasta ...	834	15 2.48	£ 40,670	+ £ 5,880	7	£ 342,960	£ 248,890	+ £ 94,070	Ord. Sk.	17	9½	12
	Arg. N.E. ...	753	14 2.48	ps. 411,300	+ ps. 106,200	33	ps. 11,502,100	ps. 10,395,900	+ ps. 1,106,200	Ord. Sk.	21	10	12½
	Bolivar ...	174	Jan., 1948	898,547	— 816,522	5	898,547	— 115,069	— 816,522	6 p.c. Deb.	25	16½	27½
	Brazil ...	...	...	...	...	...	...	...	...	Bonds	44½	26	44
	B.A. Pacific ...	2,771	7 2.48	ps. 3,250,000	+ ps. 550,000	32	ps. 84,791,000	ps. 72,092,000	+ ps. 12,699,000	Ord. Sk.	11½	6	12
	B.A.G.S. ...	5,080	14 2.48	ps. 4,507,000	+ ps. 25,000	33	ps. 121,736,000	ps. 116,817,000	+ ps. 4,919,000	Ord. Sk.	19	12	19
	B.A. Western ...	1,924	14 2.48	ps. 1,452,000	+ ps. 140,000	33	ps. 47,177,000	ps. 42,365,000	+ ps. 4,812,000	"	28½	14½	24½
	Cent. Argentine ...	3,700	14 2.48	ps. 4,145,680	+ ps. 607,630	33	ps. 114,975,731	ps. 105,721,757	+ ps. 9,253,974	"	21	9	20
	Do ...	...	...	...	...	...	...	...	...	D'd.	21	5	13½
	Cent. Uruguay ...	970	14 2.48	33,387	— 9,515	33	1,106,369	1,211,679	+ 105,310	Ord. Sk.	30½	9½	25½
	Costa Rica ...	262	Dec., 1947	35,372	+ 8,090	26	197,719	160,025	+ 37,694	Sk.	13	8½	8
	Dorada ...	70	Dec., 1947	25,670	+ 6,470	52	350,870	369,575	+ 18,705	1 Mt. Deb.	108	100½	106½
	Entre Rios ...	809	14 2.48	ps. 478,700	+ ps. 42,500	33	ps. 14,891,700	ps. 14,226,100	+ ps. 665,600	Ord. Sk.	11	6½	12
	G.W. of Brazil ...	1,030	14 2.48	37,800	+ 3,400	7	262,800	261,500	+ 1,300	Ord. Sk.	102.6	19½	31
	Inter. Ctl. Amer. ...	794	Dec., 1947	81,123,000	+ 820,452	52	813,076,437	810,462,386	+ 2,614,051	5 p.c. Deb.	88½	65	83½
	La Guaira ...	22½	Jan., 1948	879,078	+ 847,198	5	78,078	8,125,276	+ 847,198	Ord. Sk.	22½	3½	15
	Leopoldina ...	1,918	14 2.48	56,326	+ 10,401	7	381,641	419,711	+ 38,070	Ord. Sk.	8	4	1
	Mexican ...	483	31 5.47	ps. 1,464,000	+ ps. 459,100	72	ps. 7,704,700	ps. 13,441,600	+ 5,736,900	Ord. Sk.	8	—	—
	Midland Uruguay ...	319	Jan., 1948	20,654	+ 7,149	31	126,102	125,785	+ 317	Ord. Sh.	86.3	62.6	70½
	Nitrate ...	382	15 2.48	9,753	+ 1,907	6	32,856	25,408	+ 7,448	—	—	—	—
N.W. of Uruguay ...	113	Dec., 1947	3,636	+ 2,885	26	29,982	34,050	+ 4,068	—	—	—	—	
Paraguay Cent. ...	274	13 2.48	7,66,099	+ 1,306,93	33	12,113,098	12,079,147	+ 33,951	Pr. Li. Sk.	60½	44½	45½	
Peru Corp. ...	1,059	Jan., 1948	163,867	+ 15,607	31	1,189,986	1,068,462	+ 121,524	Ord. Sh.	24½	17½	18½	
Salvador ...	100	30 11.47	c156,070	+ c66,070	22	c471,690	c412,000	+ c59,690	Ord. Sk.	189½	129½	165	
San Paulo ...	153½	...	...	...	...	...	...	...	Ord. Sh.	—	—	—	
Taltal ...	156	Jan., 1948	8,870	+ 6,445	31	49,610	31,835	+ 17,775	—	—	—	—	
United of Havana ...	1,301	14 2.48	111,482	+ 26,763	33	2,077,935	1,715,939	+ 361,996	Ord. Sk.	4½	—	—	
Uruguay Northern ...	73	Jan., 1948	1,216	+ 5	31	7,721	9,242	+ 1,521	—	—	—	—	
Canada	Canadian National ...	23,535	Nov., 1947	9,373,250	+ 91,250	48	99,924,750	91,193,750	+ 8,731,000	—	—	—	—
	Canadian Pacific ...	17,037	Dec., 1947	7,151,250	+ 914,250	52	79,646,500	73,124,000	+ 6,522,500	Ord. Sk.	18½	16	18½
Various	Barsi Light ...	202	Jan., 1948	23,610	+ 3,420	44	249,972	225,870	+ 24,102	Ord. Sk.	114½	100½	103½
	Beira ...	204	Nov., 1947	109,872	+ 19,033	9	225,888	181,330	+ 44,558	—	—	—	—
	Egyptian Delta ...	607	20 1.48	20,361	+ 880	42	486,660	548,140	+ 61,480	Pr. Sh.	61	6	6
	Manila ...	...	...	...	...	...	...	...	...	B Deb.	83½	69	81½
	Mid. of W. Australia ...	277	Dec., 1947	27,441	+ 6,727	26	135,500	101,782	+ 33,718	Inc. Deb.	75	65	74½
	Nigeria ...	1,900	Dec., 1947	415,702	+ 64,840	39	3,266,011	3,440,923	+ 174,912	—	—	—	—
	Rhodesia ...	2,445	Sept., 1947	643,980	+ 102,833	52	6,797,603	6,174,664	+ 622,939	—	—	—	—
	South African ...	13,323	24 1.48	1,323,962	+ 78,497	43	53,898,218	49,349,300	+ 4,548,918	—	—	—	—
	Victoria ...	4,774	Aug., 1947	1,177,321	+ 11,568	9	—	—	—	—	—	—	—

Receipts are calculated @ 1s. 6d. to the rupee